

# CATERPILLAR®

2015 YEAR IN REVIEW



**90**  
YEARS

WHAT WE'VE  
**BUILT.**

WHERE WE'RE  
**HEADED.**

## CONTENTS

<b>A Message to Shareholders .....</b>	<b>6</b>
<b>Leadership .....</b>	<b>9</b>
Officers .....	9
Board of Directors .....	10
<b>Data and Innovation .....</b>	<b>12</b>
Solar™ InSight System™ Turns Data Into Action .....	13
Safety Services Keep Customers Alert to Fatigue .....	15
Customer Input Shifts Cat® 994K Design Into High Gear .....	16
Cat® Command Steers Mining in a New Direction .....	17
Investing in R&D .....	18
<b>Customer Support .....</b>	<b>19</b>
Cat Financial Lends a Hand .....	20
Innovation Keeps Rail Business on Time and on Track .....	21
Cat® GRADE With Slope Assist Makes the Grade .....	22
Homestead Dairy Turns Problem Into Profit.....	23
Innovation Made Simple – And Profitable with Job Site Solutions .....	25
Productivity Solutions That Promise to Wear Well.....	26
<b>Efficiency .....</b>	<b>27</b>
Shaving Weeks Off Delivery Time .....	28
Our Lean Transformation .....	30
A Global Supply Network That Delivers Under Pressure .....	31
600 Vending Machines. 100 Facilities. 1 Goal. ....	32
Streamlining Customer & Dealer Support.....	33
<b>People .....</b>	<b>35</b>
Breakthrough Workshop for Women Leaders.....	36
Marking Milestones at Both Ends of a Caterpillar Career .....	37
Sculpture Contest Welds Team Relationships .....	39
40 Years of Building a Beautiful China .....	40
Work That Matters.....	42
A Good Deed in the Badlands.....	44
Teams Employ Lean and Agile to Deliver for Customers .....	45
Caterpillar Foundation .....	46
<b>Business Review .....</b>	<b>51</b>
At-a-Glance .....	52
Performance .....	53
Segment/Division Review.....	57
Five-Year Financial Summary .....	71
Forward-Looking Statements.....	72



# WHERE WE STARTED



The 21st century world you see today has been built with the help of Caterpillar machines and solutions. We've spent the past 90 years creating, building, problem solving, innovating, testing, servicing and improving. In the process, we've built a global leader.

Holt Manufacturing Company and the C.L. Best Tractor Company merge to form **Caterpillar**, reflecting the movement of the company's line of track-type tractors.



1925

1925



First year sales were **\$13 million** for a product line of **5 tractors**.

## A WORLD IN CRISIS



Our formative years were spent growing in a global economy marked by depression and world war.

About two months after "Black Tuesday," which some say signaled the start of the Great Depression, **Caterpillar Tractor Company stock** became available for public trading (NYSE: CAT).



1929

1931

Our manufacturing headquarters move from **California to Illinois** and we change the standard paint color of our machines from gray to yellow.



1931

1944



Our strong legacy of innovation begins with the introduction of our **first diesel tractor**.

Came out with **our first bulldozer blade**. This was the first time making our own attachments. After the war, with new global manufacturing, product line exploded.



1946



Cat® machines help start the construction of more than **70,000 miles** of U.S. highways.



## GLOBAL GROWTH



The post-war construction boom in Europe and Asia translated into rapid growth as Caterpillar expanded around the globe.

We form our first overseas subsidiary – **Caterpillar Tractor Co. Ltd.** in England, the start of building plants outside the United States to be closer to customers.



1950

Sales outside of the United States **are greater** than those inside the U.S. for the first time.



1970

1963



**Caterpillar and Mitsubishi** form one of the first joint ventures in Japan to include United States ownership.

1974



Setting forth the company's beliefs to guide the organization in all aspects of its worldwide business activities, Caterpillar publishes a Worldwide **Code of Conduct**. Since then, the Code has been updated five times to reflect the company's culture and the ever-changing business environment.

## REINVENTION



Business cycles have always been a part of our story. Global recession in the early '80s and increased competition caused a sharp downturn in product demand that pushed us to the brink of bankruptcy.

A contract for the sale of 38 medium-sized pipelayers launched **China's first oil pipeline** and Caterpillar's 40-year history in China.



1975

A **\$1.8 billion** facility modernization program streamlines manufacturing processes and enhances profitability.



1986

1981



Caterpillar acquires **Solar Turbines International** from International Harvester.

1990



**Business units reorganize** to become more accountable for results.

## DIVERSIFICATION

Looking at how our customers can help meet the needs of a global population expected to top 9 billion by 2050, we execute a series of acquisitions to further diversify our products and solutions offering.

Cat® engines with **ACERT™ Technology** were unveiled. The technology represents a series of evolutionary and incremental improvements developed by Caterpillar that dramatically reduced harmful pollutants and waste emissions while maintaining engine performance, efficiency and durability.



2001

2006  
TO  
2013



**Acquisitions** of Progress Rail, Electro-Motive Diesel, Johan Walter Berg AB, Bucyrus, MWM and Shandong SEM Machinery Co., Ltd.

Caterpillar introduces the **Cat® D7E** in 2008 with a first-of-its-kind electric drive system. Then in 2012, we unveiled the **Cat® 336E H** – the first machine to use a novel hydraulic hybrid technology developed by Caterpillar. In the same year, we introduced the **Cat® 966K XE Wheel Loader** – engineered to deliver superior efficiency by utilizing an integrated Cat continuously variable transmission system.



2008  
TO  
2012

## WHERE WE'RE HEADED

We're investing in the future and, as we always have, facing challenges head on and delivering the products and services that will keep Caterpillar the industry leader tomorrow, as it is today.

## LEADERSHIP

## A MESSAGE TO SHAREHOLDERS



**We will, as we always have, face the challenges head on and deliver the products and services that will keep Caterpillar the industry leader tomorrow, as it is today.**

**DOUG OBERHELMAN**  
Chairman & CEO  
Caterpillar Inc.

Dear Fellow Shareholders,

Caterpillar faced a tough year in 2015, but we have successfully managed through many difficult economic cycles since our founding in 1925. This current cycle is particularly long – the external factors affecting us include weak economic growth, especially in developing markets; depressed commodity prices; and mining, construction and infrastructure investments down across much of the world.

Yet we remain financially strong and because of the actions we're taking I believe we will, as we have in the past, emerge stronger and always able to compete very effectively around the world.

#### **Our Response is Focused and Strong**

Even in this environment, our market share for machines increased for the fifth year in a row. I think that says a lot about what we're getting done during this downturn, and what is possible when conditions recover. Our Enterprise Strategy was updated in 2014, with full consultation and support of our board, and it continues to guide us as we build on our strengths and shape our future.

**"We're restructuring to remain strong now and become even stronger tomorrow, because this down cycle is not permanent."**

Our product quality continues to improve and is as strong as I've ever seen it. Our safety record improved again in 2015, with a 17 percent reduction in Recorded Injury Frequency (RIF), continuing the trend we've been on for many years. We believe we're achieving world-class levels of safety compared to those who have similar operations.

Why does safety matter to shareholders? Safety matters because it's a solid indication of our employees' and leadership's commitment to each other; it reduces costs and, in my opinion, indicates sound operational management.

Implementing Lean manufacturing from top to bottom in our operations – addressing the root cause of delays, defects and inefficiencies – is bringing these good results in quality and safety, and in gross margins and productivity. We've already seen an up to 95 percent reduction in internal defects per unit and improvements in warranty, and we anticipate substantial improvements as we further deploy Lean.

The capital expenditures we've made over the last few years mean our plants are modern, and our machinery and equipment are up to date. These investments, coupled with Lean manufacturing improvements, also mean we're prepared to handle more volume and well positioned when recovery does come to our markets.

We continue to invest in new products and technologies, maintaining research and development spending throughout the downturn. In fact, research and development spending as a percentage of sales is as high as it's been in more than a decade.

A Message to Shareholders

**DOUG OBERHELMAN** Chairman & CEO, Caterpillar Inc. (continued)

We are aggressively moving through this tough business cycle focusing on cost management, innovation and producing the highest quality products, including our Tier 4 emissions offerings, in the safest factories possible.

As a result of these efforts and ongoing restructuring, our balance sheet is strong. During 2015, we bought back \$2 billion of shares and increased the quarterly dividend by 10 percent. We ended the year with a 39.1 percent Machine, Energy & Transportation (ME&T) debt-to-capital ratio and \$6.5 billion of enterprise cash, which gives us the financial strength to manage now and prepare for future opportunities. We have paid higher dividends for 22 consecutive years, and since 2007 our cash dividend has more than doubled. Maintaining our dividend is a priority use of our cash.

One area that continues to frustrate us is inventory turnover. We have seen our top line decrease by \$19 billion – almost 30 percent – since 2012. Our inventory declined \$2.5 billion in 2015 and, while it's difficult to improve efficiencies when so many plants run on interim schedules, overall, it's a favorable report on the status of our Lean journey. We'll continue to focus on this as we see more opportunity for upside in terms of inventory and asset turnover efficiency.

Our captive finance company, Cat Financial, is not only a great business, it's also a great example of our integrated business model. It's been proven through several ups and downs, and its key metrics are in line with long-term averages. Past dues actually improved last year and were down to 2.14 percent at the end of 2015, compared with 2.17 percent at the end of 2014. Cat Financial is healthy, well managed and risk is very much under control. It's also proven to be a bit countercyclical. In 2015, Cat Financial represented 6 percent of our sales and revenues; in the deep recession of 2009 it peaked at 9 percent. It's also important to know that we "stick to our knitting" with Cat Financial and provide financing only to Caterpillar customers and Cat® dealers.

### Continued Restructuring

We've continued to take costs out of our business to align with lower demand, including a painful but necessary major restructuring announced in September 2015, which is in addition to significant restructuring that's been occurring since 2013. Our team moved quickly once we determined a recovery was unlikely in 2016. Our first step was a voluntary early retirement program. We followed that with involuntary workforce reductions for a total workforce reduction of about 5,000 in 2015, and we plan a total reduction of 10,000 by the end of 2018. At the end of 2015, our workforce was down more than 24,000, or about 17 percent, from its 2012 peak.

Through the end of 2015, we have already reduced about 4 percent of our manufacturing square footage. We plan further closures and consolidations affecting about 20 facilities around the world, impacting more than 10 percent of our manufacturing square footage by the end of 2018. We anticipate approximately \$1.5 billion of annual cost reductions through this major restructuring and, because we acted quickly, we'll recognize roughly half of that in 2016.

### Where We're Headed

Our board is an actively engaged, full partner reviewing and supporting our strategy and the actions we're taking. We're restructuring to remain strong now and become even stronger tomorrow, because this down cycle is not permanent.

World population growth will continue to drive increased demand for energy, commodities, infrastructure and transportation – all of which require the power, endurance and sophistication of Cat® equipment. With our strategic focus on the long term, and the prudent steps we're taking now, we'll be prepared to take full advantage of recovery when it comes.

You can read even more about our investments for the future in this report. I've already mentioned overall cost reductions, how Lean manufacturing is improving our quality, safety and efficiency, and that we're maintaining research and development spending.

You can also read about our sustainability accomplishments and goals in the Caterpillar 2015 Sustainability Report, *What We've Built. What We're Solving.* A few of the highlights in that report include how our products bring traditional, renewable and alternative energy options to urban, rural and remote communities across the world. We do this, for example, through distributed power systems, which improve energy access while emitting fewer greenhouse gases than traditional power grid systems. Additionally, we have been remanufacturing our products for more than 40 years, returning them to same-as-when-new condition, and this conserves natural resources.



A Message to Shareholders

**DOUG OBERHELMAN** Chairman & CEO, Caterpillar Inc. (continued)

In 2015, we joined an effort to emphasize the vital role that restoration of natural infrastructure – forest, prairies, farmlands, wetlands and coastal landscapes – plays in sustainable global development. Sustainability is an integral part of who we are, how we conduct our business and an essential commitment to our employees, customers and shareholders. Caterpillar also supports the Caterpillar Foundation; and, since 1952, the Foundation has invested hundreds of millions of dollars to transform lives through education, environmental stewardship and emergency relief. Today, the Foundation focuses on its mission to alleviate the root causes of poverty by supporting microfinance and access to clean water and better sanitation worldwide.

We're executing our strategy on several other fronts as well.

This was our second year implementing what we call *Across the Table*, named after the title of a book written by three Caterpillar managers in 1926. That book defined then – and to a large extent still does today – the principles that have built our unparalleled worldwide distribution network of 175 Cat® dealers with more than 160,000 employees and thousands of locations serving 182 countries.

Our strong dealer distribution network thrives on the existing machine population. So when times are difficult, as they are now, we're able to add value for our customers by helping them achieve the lowest owning and operating costs through our sales and service network that reaches every corner of the globe.

Through *Across the Table*, we're strengthening our expectations of Cat dealers and the Caterpillar teams that support them. We're working with our dealers to improve their capabilities, governance and accountability. There are about a dozen specific projects underway, everything from expanded e-business to digital technology solutions connecting our machines and engines to our customers.

And this leads me to our ongoing investments in digital technology. We talked a lot about that this year, including a joint venture with a key partner and closer ties with other existing and traditional partners. Digital transformation is a reality for the world and for our industry and while the investment is challenging given current business conditions, we are going to lead that transformation.

What we are aiming at is quite a bit different than others. We want our customers to get the most out of – not only their Caterpillar equipment – but all the equipment in their fleet. We already have more than 350,000 Cat machines and 50,000 engines, turbines and locomotives actively connected worldwide, and a total installed base of three million machines and engines.

We're going to enhance telematics and data analytics offerings across our equipment – and across other brands, too – because we want to help our customers succeed, just as we've been doing for 90 years.

We will continue to create even more value for our customers, reducing downtime and lowering owning and operating costs by predicting failures and, for example, enabling them to take fewer passes across the dirt to get the job done. Our customers will see even better fuel economy and efficiencies as we analyze the overwhelming amount of data we receive and then send it back to them, to our dealers, and even to our factories in a way we've never been able to do before. I'm pleased with how quickly we are growing our capabilities here – in a much shorter cycle than our traditional iron-product development – and that's what is needed.

In these difficult times, we're investing in the future while managing what we can control today. We will, as we always have, face the challenges head on and deliver the products and services that will keep Caterpillar the industry leader tomorrow, as it is today.



Doug Oberhelman  
Chairman and CEO





FROM LEFT TO RIGHT

Thomas A. Pellette, Edward J. Rapp, Denise Johnson, David P. Bozeman, Douglas R. Oberhelman, Robert B. Charter, D. James Umpleby III, Bradley M. Halverson, James B. Buda

## LEADERSHIP

## OFFICERS

**Chairman of the Board  
& Chief Executive Officer**

Douglas R. Oberhelman

**Group Presidents**Robert B. Charter  
Thomas A. Pellette  
Edward J. Rapp  
D. James Umpleby III  
Denise Johnson –  
effective 2016**Group President &  
Chief Financial Officer**

Bradley M. Halverson

**Executive Vice President,  
Law and Public Policy &  
Chief Legal Officer**

James B. Buda

**Senior Vice President**

David P. Bozeman

**Vice Presidents**Kent M. Adams  
William P. Ainsworth  
Mary H. Bell\*\*  
Thomas J. Bluth  
Wai Man (Raymond) Chan  
Qihua Chen  
Frank J. Crespo  
Christopher C. Curfman\*\*Bob De Lange  
Michael L. DeWalt  
Paolo Fellin  
William E. Finerty\*\*  
Gregory S. Folley  
Thomas G. Frake  
Kimberly S. Hauer  
Gwenne A. HenricksKenneth J. Hoefling\*  
Douglas O. Hoerr  
Denise C. Johnson  
Kathryn D. Karol  
Philip G. Kelliher  
Pablo M. Koziner  
Julie A. Lagacy  
Nigel A. LewisSteven W. Niehaus  
E. Jean Savage  
Mark E. Sweeney\*\*  
George H. Taylor, Jr.  
Tana L. Utley  
Karl E. Weiss  
Ramin Younessi**Chief Accounting Officer**

Jananne A. Copeland

**Assistant Treasurer**

Sally A. Stiles

**Chief Ethics and  
Compliance Officer**

Lance W. High

**Assistant Secretary**

Patrick G. Holcombe

**Corporate Controller**

Jill E. Daugherty

**Chief Audit Officer**

Kimberly R. Doe

**Corporate Secretary**

Christopher M. Reitz

**Assistant Secretary**

Joni J. Funk

**Treasurer**

Edward J. Scott

\*Appointed in 2015

\*\*Retired in 2015



FROM LEFT TO RIGHT

David L. Calhoun, Dennis A. Muilenburg, William A. Osborn, Debra L. Reed, Daniel M. Dickinson, Edward B. Rust, Jr., Miles D. White, Jesse J. Greene, Jr., Douglas R. Oberhelman, Jon M. Huntsman, Jr., Susan C. Schwab, Juan Gallardo

## LEADERSHIP

## BOARD OF DIRECTORS

**DAVID L. CALHOUN, 58**, is Senior Managing Director and Head of Private Equity Portfolio Operations of The Blackstone Group L.P. (private equity firm). He was previously Executive Chair of Nielsen Holdings N.V. (2014-2015). Prior to his position at Blackstone, Mr. Calhoun served as Chairman of the Executive Board and Chief Executive Officer of The Nielsen Company B.V. (2006-2013) and Vice Chairman of General Electric Company and President and Chief Executive Officer of GE Infrastructure (2005-2006). Other current directorships: The Boeing Company and Nielsen Holding PLC. Other directorships within the last five years: Medtronic, Inc. Mr. Calhoun has been a director since 2011.

**DANIEL M. DICKINSON, 54**, is currently Managing Partner of HCI Equity Partners (private equity investment). Other current directorships: HCI Equity Partners. Other directorships within the last five years: Mistras Group, Inc. and Progressive Waste Solutions Ltd. Mr. Dickinson has been a director of the Company since 2006.

**JUAN GALLARDO, 68**, is currently Chairman of the Board and CEO of Organización CULTIBA (holding company of Grupo Gepp and Grupo Azucarero Mexico) and Chairman of Grupo GEPP S.A.P.I. de C.V. (Pepsicola bottling group and its brands in Mexico). Other current directorships: Grupo Financiero Santander S.A.B. de C.V. Other directorships within the last five years: Lafarge SA. Mr. Gallardo has been a director of the Company since 1998.

**JESSE J. GREENE, JR., 70**, is currently an instructor at Columbia Business School in New York City where he teaches corporate governance, risk management and other business topics at the graduate and executive education levels. He was formerly Vice President of Financial Management and Chief Financial Risk Officer of International Business Machines Corporation (computer and office equipment). Mr. Greene has been a director of the Company since 2011.

**JON M. HUNTSMAN, JR., 55**, former United States Ambassador to China (2009-2011) and former governor of Utah (2005-2009). Other current directorships: Chevron Corporation, Ford Motor Company and Hilton Worldwide. Other directorships within the last five years: Huntsman Corporation.

**DENNIS A. MUILENBURG, 51**, has been President and Chief Executive Officer of The Boeing Company (aerospace/defense products and services) since July 2015. Prior to his current position, Mr. Muilenburg was Vice Chairman, President and Chief Operating Officer of The Boeing Company (2013-2015). Prior to that, he was Executive Vice President of The Boeing Company and President and Chief Executive Officer of Boeing Defense, Space & Security (2009-2013). Mr. Muilenburg has been a director since 2011.

## LEADERSHIP

## BOARD OF DIRECTORS

**DOUGLAS R. OBERHELMAN, 62**, is currently Chairman and Chief Executive Officer of Caterpillar Inc. Prior to his current position, Mr. Oberhelman served as Vice Chairman and Chief Executive Officer-Elect and as a Group President of Caterpillar Inc. Other current directorships: Exxon Mobil Corporation. Other directorships within the last five years: Ameren Corporation and Eli Lilly and Company. Mr. Oberhelman has been a director of the Company since 2010.

**WILLIAM A. OSBORN, 68**, was formerly Chairman and CEO of Northern Trust Corporation (multibank holding company) and The Northern Trust Company (bank). Other current directorships: Abbott and General Dynamics Corporation. Other directorships within the last five years: Tribune Company. Mr. Osborn has been a director of the Company since 2000.

**DEBRA L. REED, 59**, has been Chairman of the Board of Directors of Sempra Energy (energy services holding company) since 2012 and its Chief Executive Officer and a director since 2011. Prior to her current position, she was Executive Vice President of Sempra. Other current directorships: Halliburton Co. Directorships within the last five years: Avery Dennison Corporation. Ms. Reed has been a director of the Company since 2015.

**EDWARD B. RUST, JR., 65**, is currently Chairman of State Farm Mutual Automobile Insurance Company (insurance). Previously he served as CEO of State Farm Mutual Automobile Insurance Company and as Chairman, President and CEO of State Farm Fire and Casualty Company, State Farm Life Insurance Company and other principal State Farm affiliates. He also previously served as President of State Farm Mutual Automobile Insurance Company and Trustee and President of State Farm Mutual Fund Trust and State Farm Variable Product Trust. Other current directorships: Helmerich & Payne, Inc. and McGraw-Hill Financial, Inc. Mr. Rust has been a director of the Company since 2003.

**SUSAN C. SCHWAB, 60**, is currently a Professor at the University of Maryland School of Public Policy and a Strategic Advisor for Mayer Brown LLP. Prior to her current positions, Ambassador Schwab held various positions including United States Trade Representative (member of the President's cabinet) and Deputy United States Trade Representative. Other current directorships: FedEx Corporation, Marriott International, Inc. and The Boeing Company. Ambassador Schwab has been a director of the Company since 2009.

**MILES D. WHITE, 60**, is currently Chairman and Chief Executive Officer of Abbott (pharmaceutical and medical products). Other current directorships: Abbott and McDonald's Corporation. Mr. White has been a director of the Company since 2011.





For 90 years, Caterpillar has delivered breakthrough innovation inside our machines and engines. Today, that innovation is increasingly happening outside the machine. We're going "beyond the yellow iron," harnessing the power of big data to offer our customers insights that decrease operating costs, increase uptime and maximize profitability. In the process, we're shaping a new era for Caterpillar in which we not only manufacture machines and engines, but also deliver value-added solutions that take our customer relationships to an entirely new level.

---

## IN THIS SECTION:

- **Solar™ InSight System™ Turns Data Into Action**
- **Safety Services Keep Customers Alert to Fatigue**
- **Customer Input Shifts Cat® 994K Design Into High Gear**
- **Cat® Command Steers Mining in a New Direction**
- **Investing in R&D**

## DATA AND INNOVATION

# SOLAR™ INSIGHT SYSTEM™ TURNS DATA INTO ACTION



Marco Leon pulls out his phone. In a matter of touches, Marco, Development Manager – Connected Product, is analyzing the terabytes upon terabytes of data on Solar Turbines' more than 1,500 connected units in 56 countries.

At Solar Turbines, a Caterpillar subsidiary and manufacturer of mid-sized industrial gas turbines, folks like Marco Leon are focused on the data that drives decision-making in machine health, product development and customer support. They have to be, because it's an important business for customers who operate some of the world's largest oil and gas companies: If the equipment isn't working, then they're not making money.

"The data is like gold," said Leon. "If you just become a commodity provider, forget it, you're out of the game. You have to figure out how to turn the data into action."

Helping customers succeed by turning data into action was Solar's goal when creating the Solar™ InSight System™, a predictive analytics platform with 28 different capabilities. It was purposely built for equipment health management. Using data collected since 2003, Solar™ InSight System™ provides a huge volume of information to design better equipment and improve the ability to detect and solve customers' operational and product issues faster. *(Continued on page 14)*

## TRANSFORMATIVE TECHNOLOGIES

**Caterpillar is challenging everyday processes throughout our entire pipeline, from product design to service in the field, with a view to doing things better. Some of the emerging technologies helping to differentiate Caterpillar and delight customers and employees alike include:**

**3D Printing** – If a part goes wrong on the line, a 3D Printing team can quickly produce a temporary tool that keeps the line up and running and serves as a working prototype for a permanent solution. Advancements in the technology will soon make it possible for Caterpillar to 3D print a part right on the job site as a permanent solution or until a production part is available.

**Augmented Reality (AR)** – To help equipment owners maximize utilization, Caterpillar engineers continue to explore emerging technologies, such as augmented reality. Like smart phones, AR glasses are constantly evolving, becoming more advanced, smaller, lighter, faster and more affordable. These shifts have not gone unnoticed by our engineers, who are looking at ways to equip customers with these cutting-edge tools in the future to improve safety, speed and quality. Right now, our teams are testing AR technology with the aim of giving machine service technicians access to rapid, hands-free technical information, voice commands and even service specialists while they conduct safety inspections, perform maintenance and order parts. As platforms and connectivity evolve, Caterpillar's solution

engineers are committed to leveraging today's technology to boost technician confidence and enhance customers' bottom lines. Find out more [here](#).

Emerging technologies like AR and 3D Printing are part of Caterpillar's push to drive innovation and redefine what it means to be a relationship business in the digital age.

**Big Data Analytics and Uptake** – Caterpillar's commitment to digital transformation includes an investment in big data and analytics. We already have highly capable analytics teams working on solving our customers' most pressing problems. But we're also working with external experts, like Uptake Technologies – *Forbes* magazine's hottest startup of 2015. Customers use our sophisticated technology solutions today to monitor their fleets, track fuel efficiency, idle times, location and to proactively predict required equipment maintenance prior to component failure. Our existing solutions are effective, but we're working to take them to the next level, expanding what we're known for to change the fortunes of our customers worldwide. Our relationship with Uptake will combine Caterpillar's world-class product engineering and design capabilities with Uptake's software, application and data analytics expertise. As a result, Caterpillar will be able to transform the massive amount of incoming data we receive every day into even more useful information to feed back to our customers for on-the-spot decisions and planning purposes to further reduce owning and operating costs.

**Solar™ InSight System™** *(continued)*

Solar™ InSight System™ helps customers better manage risk with predictive alerts before machine faults happen and provides customers with real time access to their equipment via a mobile app. Customers don't see problems because Solar InSight, and the Fleet Manager, are anticipating them. The proof is in the numbers. Solar has avoided more than 450,000 hours of unplanned downtime for its customers.

As Leon puts it, those results happen even faster when data is available and people – from product support to design engineers to dedicated fleet managers – work in harmony.

"We're providing the technology, but they're the ones who are interfacing with the customer and know the site, the control system and the equipment," Leon says.

"Having the data and information now in your pocket is kind of like having electricity in the home – once you had it, you couldn't figure out how you could ever live without it," Leon said. "We are accelerating the development of new capabilities. It's a race without a finish line."

**Solar has avoided more than 435,000 hours of unplanned downtime for its customers.**



**1966** Originally installed in 1966, these five **SATURN GAS TURBINES** have been operating in Centerville, Louisiana, for five decades. "I want them to run for another 50 years." – Bobby Newsom, Controls Technician and Electrician, Trunkline Gas Company.





## DATA AND INNOVATION

## SAFETY SERVICES KEEP CUSTOMERS ALERT TO FATIGUE

For years, some of our customers have puzzled over what they call “unexplained incidents” – accidents where there is no apparent fault in the machine, and the root cause can’t be identified. Upon investigation, many such incidents are attributed to operator fatigue, one of the top risk factors in the industries Caterpillar serves. Caterpillar Safety Services is responding to this challenge with a solution that combines technology and cultural change to help customers see, mitigate and manage fatigue on the job site.

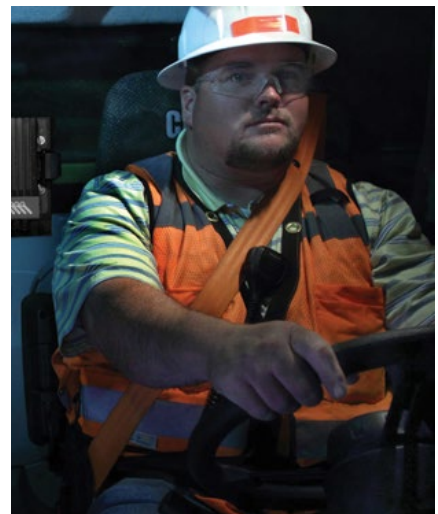
**Caterpillar’s Safety Services is responding to this challenge with a solution that combines technology and cultural development to help customers see, mitigate and manage fatigue on the job site.**

Often, the first step to addressing fatigue is using the Fatigue Avoidance Scheduling Tool (FAST) to identify areas of risk and develop optimal work schedules. One data point into FAST can be the Cat® Smartband, a wearable technology that allows customer employees to track their fatigue level in real time and provides longitudinal data about sleep quantity and quality.

In addition, for equipment operators, the in-cab Driver Safety System (DSS) monitors second-by-second fatigue and distraction data. Cameras watch the behavior of an operator’s face and eyes and immediately alert them to signs of fatigue before an incident occurs. The data is also viewed by Caterpillar safety advisors in our 24/7 fleet monitoring center, who classify potential fatigue events and can alert job site management if necessary.

Caterpillar safety advisors can correlate data from the DSS, Smartbands and FAST with data from monitoring solution software on the equipment itself to produce a detailed management report that clearly outlines the scope of risk in operations. Customers can thus make practical use of information that was previously invisible, in order to create safer, healthier conditions for their employees.

We find that the best results come from combining technology with people solutions. So, along with on-site manager workshops that increase customers’ awareness of fatigue and distraction and help them build their overall safety culture, Caterpillar uses digital analytics to pinpoint and quantify trouble areas, empowering customers with data.



## DATA AND INNOVATION

## CUSTOMER INPUT SHIFTS CAT® 994K DESIGN INTO HIGH GEAR



When we look to design a new Cat® machine for optimal performance on the job site, we've learned that the customer knows best. That's why we tapped into valuable customer input when designing the Cat® 994K wheel loader. Continuously leveraging the voice of our customers every step of the way, the Cat 994K development team reviewed the product design with 24 dealers and customers at critical junctures throughout the design process. Utilizing their feedback ensured this machine would be a true representation of the field's product needs. Modifications were then made to the design before any steel was cut.

**Touted as “bigger on the outside and better on the inside,” the Cat® 994K increases payload by 29 percent and improves cost per ton by 8 percent over the previous model.**

The development of the Cat 994K Large Wheel Loader has brought new meaning to responding to the voice of our customers. A platform refined over five models and 25 years, the 994 has been a mainstay in our line-up, helping our customers move more. The fifth iteration and Caterpillar's® largest wheel loader to date, the Cat 994K was launched in January 2016 and was redesigned from the ground up, delivering larger payloads and greater efficiencies.

As a result, the Cat 994K is positioned to lead the industry in safety and serviceability, with improved machine access and visibility, along with a best-in-class operator environment. With a complete suite of technology-enabled solutions, the Cat 994K helps our customers manage productivity and efficiency. Touted as “bigger on the

outside and better on the inside,” the Cat 994K increases payload by 29 percent and improves cost per ton by 8 percent over the previous model. The resounding success of the Cat 994K design process is a true testament to the power of collaboration between Caterpillar, our customers and dealers.



**1990** the CAT® 994 went into production. Twenty-five years later we built the first **CAT 994K** on its brand new platform.

### SIMULATION LEADS TO PRODUCT DESIGN OPTIMIZATION AND EFFICIENCY

The increased use of simulation in the development of everything from power systems to machine structures has truly allowed Caterpillar to improve overall product development efficiency, sharpening product quality and reducing time to market. Simulation reduces or eliminates the need for prototypes to be used in the design phase of development.

The large wheel loader team leverages the use of simulation in each new product development program. In fact, the first full phase of the Cat 994K product design, which is the largest wheel loader in Caterpillar history, was done virtually, and simulation touched every area of this new centerline machine at some point along the way.



## DATA AND INNOVATION

# CAT® COMMAND STEERS MINING IN A NEW DIRECTION

A fleet of gigantic Cat® 793 haul trucks rumbles along the dusty, red-sand haul roads of the Solomon mine in a vast, arid region of Western Australia. Working continuously, 24/7, the trucks maneuver through mine site traffic, back up into loading points and navigate to dump sites – all with minimal human intervention.

Iron is the reason Fortescue Metals Group (Fortescue) is there. At full operation, the new Solomon mine is projected to deliver 70 million tonnes of ore annually. It's a big job – and one that demands safety and maximized productivity. That's where Caterpillar's deep understanding of the mining industry and our customers' needs put us in the ideal position to offer semi-autonomous and autonomous solutions such as Cat® Command for Hauling. The realization of a longtime dream of the mining industry, Cat Command has improved safety and productivity.

Trucks operating with Cat Command for Hauling use sophisticated onboard intelligence and advanced guidance technology, so a small number of people can run the whole project and centralize the control. For job sites such as underground mines, autonomous solutions are fast becoming a safety necessity.

Since its inception, Cat Command has gone through a progression of offerings. Semi-autonomous solutions such as Command for Dozing, for instance, allow one operator to oversee up to three semi-autonomous Cat® D11s – Caterpillar's largest dozers – by remote control. There's even an option where the operator has no line of sight to the dozers and uses cameras for feedback.

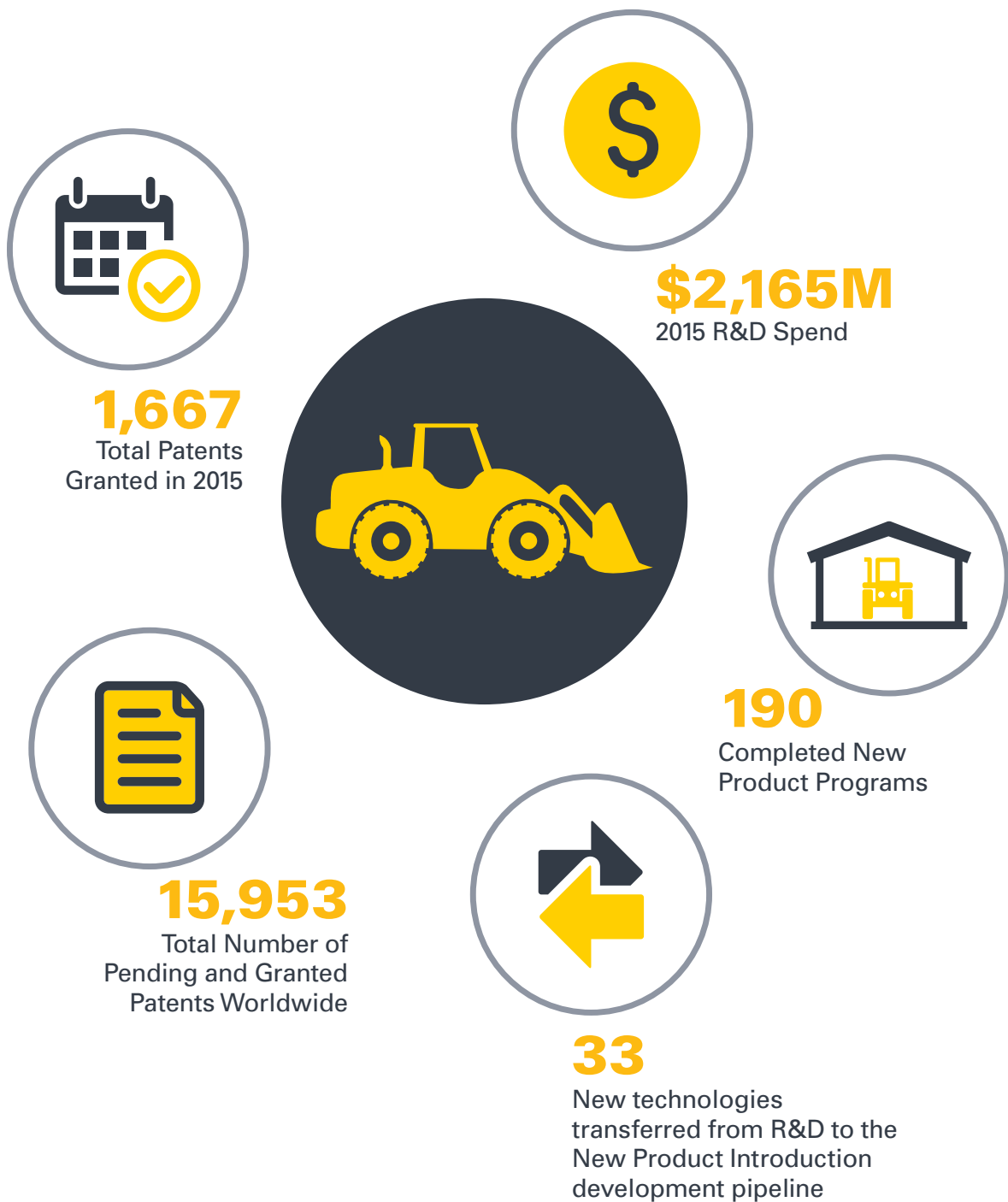
"Every mine takes a different journey to autonomy," explains Sean McGinnis, product development manager. "But that path always leads to a safer, more productive mine site. Cat Command reduces variations in the way the machine is operating, ensuring that it operates the same way, every time. It's like having the mine's best operator at the controls, but he or she is located safely away from any potential hazards. It's the best of both worlds: increased productivity combined with increased safety."

Today, the Cat Command concept continues to meet customer needs in ways that we couldn't anticipate five years ago. That's what makes innovation exciting and what energizes us to keep finding solutions that make a real difference.





## DATA AND INNOVATION

INVESTING  
IN R&D

# CUSTOMER SUPPORT



Our business strategy is a simple one: make our customers more successful. We work with our dealer network every day around the world to ensure that success – at construction sites and mining quarries and power plants. Our goal is to speed the delivery of customer support by being an agile organization positioned to respond efficiently and effectively to customer needs. Because when our customers win, we win.

---

## IN THIS SECTION:

- Cat Financial Lends a Hand
- Innovation Keeps Rail Business on Time and on Track
- Cat® GRADE With Slope Assist Makes the Grade
- Homestead Dairy Turns Problem Into Profit
- Innovation Made Simple – and Profitable with Job Site Solutions
- Productivity Solutions That Promise to Wear Well



## CUSTOMER SUPPORT

# CAT FINANCIAL LEND A HAND

When customers fall on hard times, Caterpillar Financial Services Corporation sees it as an opportunity to demonstrate that they are not a bank, but a partner who understands their customers' needs and industry.

That's exactly what happened when Customer Account Specialist Filecia Davis called to check on a logging customer when his usual payment hadn't arrived on time. She learned that a tree had fallen on the customer and fractured his back in two places. He was obviously out of work and anticipating high medical bills on top of his usual expenses. As Davis listened to his wife explain the situation and their needs, she knew Cat Financial could help.

**We can't always anticipate our customers' challenges, but when they arise, we can demonstrate that we understand what's most important: their business, employees and families.**

When Davis hung up the phone, the Cat Financial team went to work. Davis, along with Customer Account Manager Bill Schowalter, Customer Solutions Support Manager Patrick Carnell and Territory Manager Reed Campbell, approved five months of skipped payments and loan restructure documents in less than 48 hours.

"We understand things happen to our customers that they can't control," Carnell said. "Modifications are a great way to show support for our customers and that we have an understanding of their industry that a bank may not demonstrate."

Knowing that his business assets were secure, the customer could concentrate on getting better and gradually coming back to work.

We can't always anticipate our customers' challenges, but when they arise, we can demonstrate that we understand what's most important: their business, employees and families.

## BLUEPRINTING 2.0

Caterpillar's commitment to superior customer support is behind a new Cat Financial exercise, Blueprinting 2.0, that has been completed in several countries. Participants are encouraged to walk through the business experience from the customer's point of view, determine customer emotions at different parts of the process and identify areas for improvement. After the exercise, action plans are developed and implemented. It's just another way Cat Financial goes the extra distance to ensure we have customers for life.

CUSTOMER SUPPORT

## INNOVATION KEEPS RAIL BUSINESS ON TIME AND ON TRACK



As long as there have been railroads, there has been someone glancing at a clock to see if the trains are running on schedule. For a railroad, reliability is everything, and the industry continually seeks better ways to get trains where they need to go, safely and on time. Today, advances in technology and innovation are transforming global rail transport. And Caterpillar's rail business is leading with innovative solutions that tackle some of the most challenging problems facing the industry.

**For a railroad,  
reliability is everything,  
and the industry  
continually seeks better  
ways to get trains where  
they need to go, safely  
and on time.**

### Analytic Solutions for EMD Locomotives

The advantages of condition-based, as opposed to time-based, maintenance are clear. If customers can predict when a component needs to be changed before failure occurs, unplanned downtime can be greatly reduced, or even eliminated. Progress Rail, along with Uptake – an analytics provider – are making this possible through an advanced technology platform that allows customers to collect data from a variety of railroad equipment and business systems. The data yields insights to enable customers to address problems before they happen, thereby maximizing asset utilization, efficiency, performance and profitability.

### Multi-Inspection Radar Appliance (MIRA)

Train crossings that use the same infrastructure as cars, trucks and other vehicles have always been potentially hazardous – often due to vehicles' ignoring installed signals and/or barriers. MIRA includes the best features from previous level crossing protection solutions, plus enhancements based on customer experience, as well as new European Union requirements. For example, MIRA can detect, from multiple vantage points, when an object is blocking the tracks and send a signal back to the train, so that it can immediately begin decelerating.

### PowerView Event Recorder

When something does go wrong, rail customers need tools that provide deep insight into what contributed to the event, so they can take steps to help prevent it from happening again. The new Progress Rail™ PowerView Locomotive Event Recorder and Playback Software, along with Progress Rail's inspection and information systems, give customers access to the next generation of "black box" technology for the rail industry. With a focus on ease of use, all data is combined in a synchronized format, including video, data, GPS mapping and more, while a full graphical interface enables enhanced visualization of events.

Today's railroad operators can be far more proactive in keeping their trains running efficiently and safely. Thanks to Progress Rail and strategic alliances, there are more ways than ever for our rail customers to stay on time and on track with their industry.





## CUSTOMER SUPPORT

**CAT® GRADE WITH SLOPE ASSIST MAKES THE GRADE**

For an operator, grading a job site is no easy task. Achieving the correct slope and grade can require constant manual adjustment, and rework is common. According to our customers, they need dozers that can help them be more productive, more efficient and achieve a consistently higher quality of work. We've listened and answered with Cat® GRADE with Cat® Slope Assist, a truly game changing Cat® Connect Technology that helps operators get more work done faster by automating blade adjustments, without requiring added investment in GPS systems.

Cat® Slope Assist is a factory-integrated blade control system for Track-Type Tractors that helps operators reach target slope fast by automatically maintaining the dozer blade's established blade angles. The operator can simply program the desired 2-D slope from the cab without grade stakes or GPS equipment. Slope Assist automatically adjusts blade movements to maintain the precise blade angle throughout the cut. The operator can concentrate on machine speed and direction while Slope Assist takes care of the precision blade work.

Cat Slope Assist enables operators to finish grades up to 39 percent faster, with better surface quality and significantly less operator effort.

Differentiated technology like Cat Slope Assist comes from keeping the conversation with our customers robust and relevant. That's a formula for customer success and lasting, mutually profitable relationships between them and Caterpillar.

**Cat® Slope Assist enables operators to finish grades up to 39 percent faster, with better surface quality and significantly less operator effort.**

**1977** CATERPILLAR showcased a new innovation, **THE TRIANGULAR-TRACK ELEVATED SPROCKET SYSTEM**, on the Cat® D10.



## CUSTOMER SUPPORT

## HOMESTEAD DAIRY TURNS PROBLEM INTO PROFIT



Based in Plymouth, Indiana, Homestead Dairy began as a modest family farm with only 110 cows. In 1979, brothers Floyd and Dan Houin purchased the farm from their dad and turned it into the massive dairy operation that it is today. The dairy now hosts 1,800 milking cows and 300 dry cows, while an additional 1,700 cows come in from three nearby facilities for milking. However, more cows means more manure, and the odor directly impacted nearby residents.

The Houins saw the possibility to turn a problem into a profit. They decided to build a biomass waste-to-energy facility that could convert the manure into electric power. Floyd knew that Homestead Dairy's equipment would need to run 24/7 with minimal downtime, so dependability was the deciding factor in choosing Caterpillar to supply the power. In researching the project, Floyd Houin toured a farm with a renewable energy facility that ran at peak efficiency, even with their older-model Cat® generator sets. That's when the Houins knew they'd trust their project to Caterpillar.

Homestead Dairy partnered with local Cat® dealer, Michigan Cat, to customize a power generation system for Homestead Green Energy, the energy-producing business within the dairy – two Cat® G3512A generator sets and ancillary equipment. *(Continued on page 24)*

## POWER TO PRESERVE THE PAST



The beautiful grounds and stunning architecture of Thomas Jefferson's historic residence, Monticello, functions today as an important U.S. landmark, world-class museum and academic think-tank, attracting more than 400,000 annual visitors.

Located outside of Charlottesville, Virginia, Monticello also houses one of the country's oldest and largest collections of historic documents. To help preserve and protect those irreplaceable collections for future generations, Caterpillar donated a 500kW Cat® C15 generator set, with local Cat dealer Carter Machinery providing the technical support, commissioning and testing. This followed a previous donation of a 350 kW Cat® C15 diesel generator set that provides standby power for Monticello's Robert H. Smith International Center for Jefferson Studies.

The donations were part of the estate's "Mountaintop Project," a multiyear effort to authentically restore the house and grounds to their appearance during Jefferson's retirement. We are proud to see these valuable assets entrusted to the quality and reliability of Cat® products.

**1969** CAT® ENGINES supply  
power for the **APOLLO 11**  
**MISSION** to the moon.



### **Homestead Dairy** *(continued)*

Homestead Green Energy has been in constant operation since October 2013, and the Cat® generator sets are essential to the waste-to-energy process. The manure is collected in pools and piped 1,700 feet to a pair of mixing tanks that empty into two anaerobic digesters. Once inside the tanks, the waste is heated and treated with microbes that produce methane gas, which is used to fuel the gas generators. Generator exhaust heat and jacket water heat are used to warm up the digesters as part of the fermentation process.

Beyond odor reduction and the financial return from producing electricity, Homestead Dairy uses the dewatered solids from the digesters as clean bedding for the cows. Additionally, the liquid nutrient byproduct is held in lagoons and used to fertilize the farm fields.

"By turning this abundant substance into an income stream, we've made the dairy more profitable," said Ryan Rogers, plant operator for Homestead Green Energy. "It also helps increase nutrient value, which is great for the environment. The crops absorb the manure better, and odor reduction for the community is a huge benefit."

The Homestead Green Energy installation demonstrates the economic viability of smaller-scale, waste-to-energy operations to create wins for business, the community and the environment.



## CUSTOMER SUPPORT

## INNOVATION MADE SIMPLE – AND PROFITABLE WITH JOB SITE SOLUTIONS

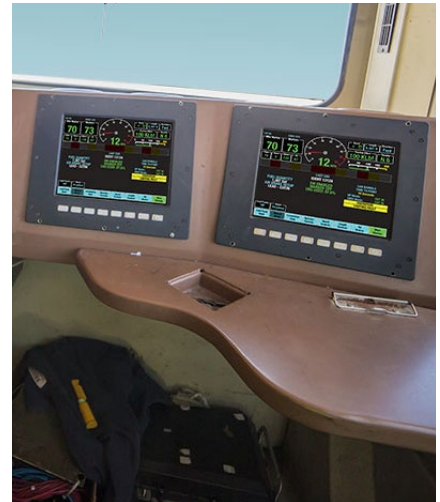
Near the end of his shift, a mine truck operator glances up at the dashboard mounted in his cab. The simple display shows that he exceeded several production targets. However, according to the data, there's room for improvement. Payloads can be increased and load times reduced.

That's valuable information with the potential to increase efficiency, productivity and asset utilization – all of which contribute to the bottom line. But technology and data have little worth until the value is extracted and transformed into actionable tasks. Caterpillar is uniquely positioned to do just that. We are forging ahead into areas of unprecedented collaboration with our customers and dealers to develop the capabilities and processes that put technology and data to work, with bottom-line results for our customers, dealers and Caterpillar.

With Job Site Solutions, we've made it easier than ever for customers to collect raw data from their machines, and we provide the technology to interpret that data into tangible information that means something to them. The next step is to analyze the data to better understand the customers' unique challenges and opportunities. Simple, real-time data can show them what went wrong (or right) on the last run, how they're doing against their production goals, whether they have the right number of trucks on the route or need to reduce wait times – nearly every aspect of their operations is factored in.

Once we've established a baseline, and it's clear what needs to be accomplished, Caterpillar becomes a trusted, hands-on partner in our customers' production and fleet management. Importantly, their costs for these solutions are based solely on the actual value received from the improvements we help them implement. It's about pay for performance. In very concrete terms, when the customer wins, we win.

Through these solutions, we are delivering on the performance and value premium of Cat products and extended enterprise. Customers gain increased throughput and can invest more in their businesses. It's a way in which Caterpillar, our dealers and our customers can realize and share gains together, helping improve efficiency and profitability, as well as sustainable, long-term relationships.





## CUSTOMER SUPPORT

## PRODUCTIVITY SOLUTIONS THAT PROMISE TO WEAR WELL



In the heavy equipment industry, time is money. If worn-out parts suddenly fail, costly shut downs could be needed until the part is repaired or replaced. Caterpillar employees and Cat® dealers work hard every day to make sure that doesn't happen. And now, new digital technology is helping better equip customers and dealers to avoid failure before it happens. Specifically, the ability to better measure wear rates and manage replacements could save customers hundreds of hours and millions of dollars. That's the idea behind the development of a mobile tool that can collect wear measurement data from a part and sync that data with the customer's Cat dealer to receive an instant, reliable analysis.

### AN INTERCHANGE THAT'S BUILT TO LAST

Seamless communication and execution is key for any project to run efficiently and profitably. But, for some, it's absolutely vital. As customer Kiewit rebuilds the nearly 50-year-old Turcot Interchange in Montreal, Canada, Cat® dealer Hewitt using the latest connected work site technology from Caterpillar is helping them optimize and supplement over 60 pieces of machinery while updating the intersection of 145 kilometers of road, 11 kilometers of highway and a railway line – all by 2020 and at the lowest cost per ton and per hour. See how Hewitt is helping meet complex and unique challenges, so their customer can focus on the job at hand.

 [VIEW HERE](#)

In 2015, Caterpillar began working together with outside experts to provide measurement tools for the heavy equipment industry – tools that make it easier for customers to measure wear in order to optimize fleets. The goal is to bring customers simple processes on web-based and mobile platforms that provide accurate, immediate access to useful, real-time data while still in the field. And that's something Caterpillar customers like Dale Losh, fleet manager for Gradex Inc., don't take for granted.

"Being able to predict when that one major component is going to be at the end of its life cycle is pretty important to me because then I can schedule my maintenance and downtime," explained Losh. "In turn, that really affects the bottom line, and that's what it's all about."

Caterpillar is committed to staying out in front as emerging technologies revolutionize our industry. We have more opportunities than ever before to help our customers maintain a competitive advantage and achieve new levels of equipment productivity and profitability.

## 1920s CATERPILLAR'S

Undercarriage story started with the original CAT® TRACK-TYPE TRACTOR, and it's still an integral part of our business today.





In an insistent and urgent world, winning organizations make the most of every minute, resource and opportunity. Caterpillar is going after that win by leveraging Lean, Engineered Value Chains and building strong Foundational Capabilities throughout our value chain to fulfill our Customer Service Promise, maximize Operating Profit After Capital Charge (OPACC) and create a competitive advantage. We're becoming a more disciplined, less complex organization that is committed to finding smarter and faster ways to work across the enterprise. This translates into a powerful competitive advantage that helps Caterpillar improve market position and sustain long-term success.

---

## IN THIS SECTION:

- **Shaving Weeks Off Delivery Time**
- **Our Lean Transformation**
- **A Global Supply Network That Delivers Under Pressure**
- **600 Vending Machines. 100 Facilities. 1 Goal.**
- **Streamlining Customer & Dealer Support**





---

**EFFICIENCY**

---

## SHAVING WEEKS OFF DELIVERY TIME

When an order for a new Cat® 777G off-highway truck comes in, a process begins that can take up to 20 weeks to delivery – a span of time that doesn’t always work in today’s fast-paced and competitive business arena. That’s where Caterpillar’s Engineered Value Chain approach comes in. It’s the innovative way Caterpillar is redesigning its end-to-end business to better understand market requirements and meet customer expectations.

Caterpillar’s off-highway truck team realized success with its Engineered Value Chain program when it launched a finish to order (FTO) pilot build of the Cat 777G. The team’s goal: to maximize speed to the customer.

When the pilot was completed, the team had shaved eight weeks off delivery to the customer. At the same time, Caterpillar reduced the number of configurations by over 80 percent without reducing customer choice.

With FTO, the chassis is pre-built with upgraded options, such as common fuel lines and extended-life brakes. The chassis is held in strategic inventory so that when an order comes in, we can box the components and ship the order to the dealer for final assembly, thereby driving simplicity, improving quality and stabilizing our supply.

Another Engineered Value Chain program leveraged a similar FTO build strategy to better meet customer needs. Caterpillar’s wheel excavator team in Grenoble, France, delivered an Cat® M320F wheel excavator that perfectly matched the configuration and application needs of the customer – while reducing lead time from an average of 12 weeks to four weeks – a 66 percent reduction.

The success of our Engineered Value Chain programs demonstrates Caterpillar’s ability to use different build strategies – in this case semi-finished machines – to reduce lead times and better meet customer needs. We are improving our end-to-end business by simplifying our product offerings and planning more efficient build schedules. We can then deliver the product the way the customer wants it ... when the customer wants it.



## STRONG 2015 LEAN RESULTS

## East Peoria Transmission Team

**\$1M**

Scrap and Inventory Reduction

**98%**

Reduction in Rework

**14**

Month Period

## Caterpillar Suzhou, China

Medium Wheel Loaders

**0**

Missed Defects

**12**

Month Period

## LEAN IS CRITICAL TO CATERPILLAR'S FUTURE BECAUSE IT WORKS



In 2015, Caterpillar Chairman and CEO Doug Oberhelman spoke about three key initiatives critical to Caterpillar's future – data analytics, Across the Table and Lean. What exactly is Lean and why was it called out?

Lean is critical to our future because it works. Today, products flow through our factories faster than ever, quality levels are at the highest in company history and products are delivered to the customer more quickly, generating cash flow.

Lean impacts every job – whether production or office environment – in some way. Lean is how Caterpillar eliminates waste and drives efficiencies. By standing up quality gates throughout our office and production processes, we stop any defects to our internal and external customers – first by catching them at our quality gates, then by eliminating them.

Lean is built on a strong foundation of 6 Sigma and the Caterpillar Production System (CPS). The methodology, first introduced at Caterpillar in 2013, picked up momentum in 2014, and today has been deployed at more than 94 production facilities and across multiple upstream processes – otherwise known as support functions in the office environment – throughout the enterprise.



## EFFICIENCY

## OUR LEAN TRANSFORMATION

Since 2013, we have been committed to Lean to drive process and quality improvements at Caterpillar. Lean challenges all employees to get closer to the customer so they can deliver products and services based on the customers' true expectations. Our Lean journey goes beyond manufacturing to include all functional areas that execute business processes on a daily basis, including engineering, marketing, purchasing, accounting and human resources.

### LEAN BENEFITS



**Stabilizing  
the Business**



**Enhancing  
Product Quality**



**Improving  
Velocity**



**Driving Value  
for Our  
Shareholders**

**RESOURCE  
INDUSTRIES**  
OFF-HIGHWAY TRUCK

**45%**

**Reduction in field  
assembly time**

**ENERGY &  
TRANSPORTATION**  
MID-SIZE ENGINES

**18%**

**Increase in  
throughput**

**CONSTRUCTION  
INDUSTRIES**  
MOTOR GRADER

**65%**

**Inventory reduction  
(days on hand)**

## EFFICIENCY

## A GLOBAL SUPPLY NETWORK THAT DELIVERS UNDER PRESSURE



Nearly 40 percent of U.S. trade to and from Asia passes through West Coast ports in California. Keeping the flow of goods through these ports moving swiftly and efficiently is a priority for logistics and procurement networks across countless companies, including Caterpillar.

When a three-month labor dispute at one of these ports resulted in significant terminal congestion, the expertise of Caterpillar's logistics team translated into millions of dollars in savings, as well as ensuring that our supply flow remained resilient.

When business operations eventually returned to normal, many companies were left dealing with severe financial impact. While Caterpillar experienced added costs and some slowing in our materials flow, these were a fraction of the impact on other companies. That's how we know our Global Supply Network can deliver under pressure – not merely reacting to fluctuations in logistics, but truly taking charge of and managing our supply network.



**1909** **MANUFACTURING** began in the Peoria area – an advantageous location in the Midwest that **HOLT AND BEST** recognized as having the ability to reach the entire United States.

Our staying power throughout the slowdown was due, in very large part, to the collaboration and flexibility of our Global Supply Network. Using a winning combination of procurement and logistics data and innovative thinking, a clearer inventory picture emerged to help streamline and divert shipments.

"We were able to see not only the best ports, but also the best terminals in those ports," explained Global Supply Network Director of Logistics Scott Shepherd, "so we could react faster and accurately re-route shipments. This allowed us to move material more quickly, while limiting added costs and overall supply disruption."



## EFFICIENCY

**600 VENDING MACHINES.  
100 FACILITIES. 1 GOAL.**

Building Cat® equipment requires having a lot of “indirect inventory” on hand for our employees – things like safety glasses, gloves, ear plugs and other necessities. Those items can be hard to keep track of, but through the use of automated dispensing machines, Caterpillar can now manage this inventory with better data visibility, accuracy and completeness than ever before.

In 2012, our Global Supply Network piloted its Automated Indirect Inventory Management (AIIM) initiative at the company’s North Little Rock, Arkansas, facility – using onsite vending machines to better manage and dispense indirect supplies.

From there, the concept and results spread. To date, and in less than three years, the Global Supply Network team has collaborated with multiple Caterpillar locations to launch AIIM across the globe. Most recently in 2015, the initiative reached a key milestone of deploying AIIM at 100 Caterpillar facilities – with 600 vending machines globally connected and delivering point-of-use value. As a result, the enterprise can use the analytics to leverage its global scale to reduce consumption, indirect inventory and costs.

**Most recently in 2015,  
the initiative reached a  
key milestone of deploying  
AIIM at 100 Caterpillar  
facilities – with 600  
vending machines globally  
connected and delivering  
point-of-use value.**

**AN INDUSTRY LEADER WITH WORLD CLASS RESULTS**

Caterpillar continues to improve upon historical best safety performance and we are an industry leader with world class results. Beginning in 2003, we implemented an enterprise-wide initiative to focus upon safety called Vision Zero. Today, we’re proud that our Recordable Injury Frequency has improved 91%, but there is more work to do. Breakthrough safety performance is continuing with our Lean Transformation by focusing on standard work, which means more folks are going safely home, every day.

## EFFICIENCY

## STREAMLINING CUSTOMER & DEALER SUPPORT



The speed of business in the digital age demands that lines of communication and support be as tight and efficient as possible. For Caterpillar, those lines run mainly among the company, our dealers and our customers. After 90 years in the business, we know that to continue to thrive through change, we must periodically take a long, hard look at the way we work together and be willing to make adjustments that reflect changes in the industry, environment and available technologies.

We begin by recognizing that our dealers are in the best position to anticipate and meet our customers' needs. The company's role is to provide support and empower dealers to more efficiently service the end user. We reorganized all six divisions within Customer & Dealer Support (C&DS) in 2015 with the following objectives: to improve delivery of customer support, reduce complexity, capitalize on aftermarket opportunities, fully capitalize on our digital initiatives and strengthen the Caterpillar/dealer relationship for future growth. The organizational changes include:

**Distribution Services Divisions** are our primary interfaces with our dealers. We've consolidated them from three to two: **Asia Pacific, CIS, Africa & Middle East Distribution Division** and **Americas & Europe Distribution Division**. The new split reflects the common needs of dealers and customers who operate with similar issues and environments and enables them to work faster and better together.

**Global Aftermarket Solutions Division** combines sales and marketing into one strong team that works alongside our dealers to accelerate aftermarket sales and service solutions growth.

**Wear, Components & Aftermarket Distribution Division** combines component design and manufacturing with aftermarket distribution to improve component availability and inventory. This group works closely with the Global Aftermarket Solutions Division to increase responsiveness to customer needs.



**1926** three visionary CATERPILLAR managers sat down in San Leandro, California, and wrote "ACROSS THE TABLE." In it, they outlined the **FOUNDATIONAL PRINCIPLES** that define the special relationship between CATERPILLAR and our **DEALERS**.

**Marketing and Digital Division** is charged with the digital transformation of the dealer and customer experience. The team will establish a go-to-market strategy for the integration of data analytics and innovation, as well as being responsible for global brand management, marketing, rental services and retail sales development.

**Sustainable Solutions Division** at the heart of our sustainability drive from a product sense, brings together the sustainable businesses of Cat Reman and Caterpillar Safety Services with Caterpillar Work Tools, our machine attachment business, OEM Solutions and Defense & Federal Products.

*(Continued on page 34)*



### Streamlining Customer & Dealer Support *(continued)*

In addition to these organizational changes within C&DS, we've brought product, operations, sales and marketing together in both surface and underground mining to better align with our customers and enable a more effective cost structure in a challenging mining environment. **Surface Mining & Technology Division** now encompasses Hauling & Extraction and surface mining sales and support teams, while underground mining and sales support joins the **Material Handling & Underground Division**.

Finally, within Construction Industries, the **Global Construction & Infrastructure Division** will also assume sales responsibilities for work tools, industrial and waste, paving and forestry products, as well as heavy rentals.

These organizational changes will help increase accountability at the divisional level, generate top line sales by optimizing dealer performance and capability, grow marketing capabilities through data analytics and digitization, and help dealers reconnect with customers to ensure the delivery of our brand promise. With a leaner, more agile business model, Caterpillar is driving toward operational excellence across all of our dealers with a better structure to support future growth.



# PEOPLE

Best quality. Best reliability. Best endurance. The same attributes that define our products define our people – more than 105,000 of them around the world. For 90 years, Caterpillar people have been building the machines that have built our world. We're confident that Caterpillar's long-term future is secure thanks to our global team's drive to perform at a superior level. It's a commitment that extends beyond the workplace where Caterpillar employees contribute their time and talents to making the world around us a better one.

---

## IN THIS SECTION:

- Breakthrough Workshop for Women Leaders
- Marking Milestones at Both Ends of a Caterpillar Career
- Sculpture Contest Welds Team Relationships
- 40 Years of Building a Beautiful China
- Work That Matters
- A Good Deed in the Badlands
- Teams Employ Lean and Agile to Deliver for Customers
- Caterpillar Foundation



## PEOPLE

## BREAKTHROUGH WORKSHOP FOR WOMEN LEADERS

"This was by far the best course I've taken at Caterpillar in the nine years I've been here. It made me learn about myself, gave me confidence and made me really connect with women at work for the first time."

That's the sort of feedback we're receiving about our Breakthrough Leadership for Women workshops – the first leadership program created by a Caterpillar employee resource group – in this case the Women's Initiatives Network (WIN) – and the first gender-specific workshop designed for high-potential, high-performing women. Research shows that companies perform better when they have more women in leadership positions. So it makes sense to develop and retain female talent in order to help drive the greatest enterprise returns.

Designed by women, for women, the Breakthrough Leadership for Women workshop addresses specific challenges faced by female leaders and aims to strengthen Caterpillar's female leadership pipeline. Participants are chosen from high-potential female talent with the ability and desire to fill higher positions of leadership.

Based on best practices for female leadership development, the workshop confronts the reasons for perceived differentiations in the workplace, while focusing on authentic leadership styles that incorporate Caterpillar values. The objectives of the course are to help women manage gender bias challenges; negotiate conditions for leadership success; align values, aspirations and actions in high stakes situations; network with other women leaders; and develop a personal brand and vision for authentic leadership.

Breakthrough Leadership can help Caterpillar outperform competitors by fully leveraging the talents and leadership potential of our entire workforce. The impact to the business is a more inclusive, engaged workforce, high-potential leaders with increased confidence and negotiation skills, and hundreds of women who are exploring personal authentic leadership and sharing it back with others.

### BREAKTHROUGH LEADERSHIP FOR WOMEN: RESULTS TO DATE

**250+**  
Participants

**30**  
Caterpillar Divisions

**14 Workshops**  
Peoria, Geneva, Singapore & Beijing

**92%**  
Participants who report increased confidence after 6 months



**2006 WOMEN'S INITIATIVE NETWORK** was established and now has more than **3,000 MEMBERS** participating in **40 CHAPTERS** worldwide.

## PEOPLE

## MARKING MILESTONES AT BOTH ENDS OF A CATERPILLAR CAREER



In 2015, two Caterpillar employees marked career milestones in two very different journeys. Their stories illustrate the satisfaction that comes at the end of a long career and the exhilaration that comes from being given the first chance to give your all.

In early 2015, Ed Flesburg retired after 60 satisfying years of service with Caterpillar. As a 6 Sigma Black Belt within the Global Supply Network Division (GSND), and over the course of his notable career, Ed achieved much success and delivered many outstanding results for the company.

Ed began his career in 1955, as a chip wheeler in East Peoria, Illinois. After returning from deployment to Korea, he spent the next 51 years in many different roles with the company, from janitor to drafting, designing and engineering.

Throughout his tenure, Ed achieved four company patents to his name, developed 14 major design changes, resolved 11 major design problems and generated more than \$55 million in cost reductions. In addition, he pioneered the development of the heat transfer coolant category, where his experience and expertise was priceless.

Ed's manager, James Dryden, sums up Ed's outstanding tenure, "Famous basketball coach John Wooden once said 'Who can ask more of a man than giving all within his span? Giving all, it seems to me, is not so far from victory.' I cannot think of a better quote to describe Ed's work ethic and outstanding accomplishments to make Caterpillar the successful company it is today."

As Ed was accepting well-wishes for the future from his grateful team, thousands of miles away 19-year-old Farooq Kahn was looking forward to the future for the first time in a long time. Farooq is training as an industrial mechanic at Caterpillar Mining in Lünen, Germany. His arrival at Caterpillar marks a milestone in a remarkable journey.

Farooq escaped from his home country of Afghanistan when he was only 15 years old, leaving his parents and siblings and all he knew behind him. It took him five months to arrive in Germany. He spoke not one word of German, had a very dangerous escape behind him and was completely on his own.

After his graduation from German elementary school, Farooq sent over 70 applications to companies, but only Caterpillar in Lünen was willing to give him a chance. At the time his German language skills were limited, and, as a refugee, he only had a temporary residence permit.

According to a study conducted in Germany, only 15 percent of companies are ready to hire young people with foreign roots. Caterpillar in Lünen has been a part of this small group of companies for years, but Farooq, now successfully integrated in the company, was the first refugee hired.

"We strongly believe it to be part of our social responsibility to give young people like Farooq the possibility to enjoy a good education." *(Continued on page 38)*

**Caterpillar employees come to us in many different ways, with many different stories. But we are humbled by what they have in common: the loyalty and dedication to put their talents and enthusiasm to work to help us build the world.**





### Marking Milestones *(continued)*

Farooq's aim is to successfully complete his industrial mechanic training and then possibly continue his studies. His instructor is very enthusiastic about his curiosity, ambition and commitment. "All I want is to build a new life for me here," said Farooq.

Caterpillar employees come to us in many different ways, with many different stories. But we are humbled by what they have in common: the loyalty and dedication to put their talents and enthusiasm to work to help us build the world.

**1933** After graduating from the apprentice program in 1933, future **CHAIRMAN OF THE BOARD BILL NAUMANN** started his rise through the ranks as an inspector at the East Peoria Plant. Bill worked as a foreman, general foreman of inspection, factory manager and vice president before being named Chairman of the Board in 1975.



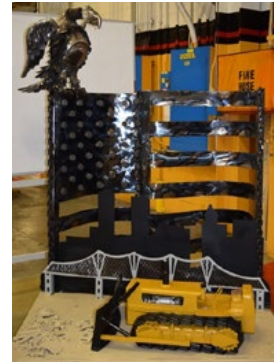
**1925** In 1925 Caterpillar employed **2,537** people. Today, our **100,000+** employees continue to change the world. From bringing basic infrastructure like roads, airports and power to developing societies, powering space missions, widening the Panama Canal, to building the world's superhighways, these employees are involved in the world's most important projects.



## PEOPLE

## SCULPTURE CONTEST WELDS TEAM RELATIONSHIPS

We know how much talent and knowhow it takes to make the excellent welds on our Cat® machines, but most of those welds will never be seen. In East Peoria, Illinois, our welders showcased their talent and skill by designing and manufacturing one-of-a-kind metal sculptures. The remarkable results included:



Over the course of five weeks, four teams of approximately 15 welders each were challenged to create a sculpture out of scrap metal that met Caterpillar quality criteria and safety requirements. Spending between 40 and 80+ hours on each sculpture after their scheduled production work was complete, the teams designed and built one-of-a-kind works of art that showcased their technical and artistic talent.

In daily work, welding is a solitary job, with each welder performing different tasks at different stations. So, for most, this was the first time they were able to work on a project alongside their fellow welders. "We're all a team here, but they get my end product," said welder Tom Wilson. "To get back there and work together was really a joy."

The sculpture teams made that joy apparent in a very visual way. Across Caterpillar and the local community, people took notice of their pride and passion for what we do every day, and also for our heritage.

**"The employees came to us with the idea of a fabrication sculpture competition. They formed teams and developed their own visions. All we said was that the finished work had to use scrap metal and fit on a pallet. Their final creations were truly remarkable works of art."**

— Tim Williams, the East Peoria facility manager

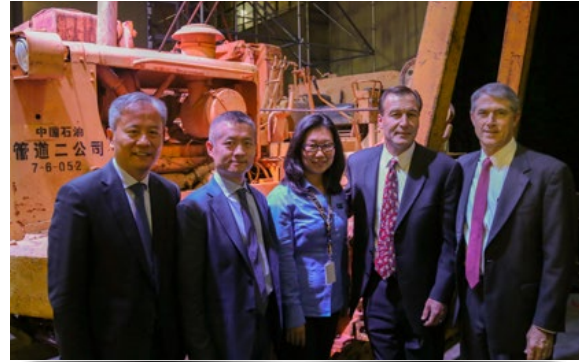


**1910** The first **HOLT TRACK-TYPE TRACTOR** is built at the newly purchased plant in East Peoria, Illinois.

The sculptures went on display in the Caterpillar Visitors Center in January 2016, and the fun and positive experience continues to have an impact on the participants. Randy Peters, a welder for 12 years, is grateful for the opportunity and the camaraderie it inspired. "I'm just tickled that these guys had a chance to really get out there and shine. I think the company will talk about this for years to come."

## PEOPLE

## 40 YEARS OF BUILDING A BEAUTIFUL CHINA



The Telex sent from Chinese officials to Caterpillar Vice President Delmar Lammers in 1975 was three simple words: “SEND PIPELAYER EXPERTS.” Three weeks later, a signed contract for the sale of 38 medium-sized pipelayers launched China’s first oil pipeline and Caterpillar’s 40-year history in China.

**“Twenty-five years ago, you could just feel something big was starting to happen in China. It felt as if the country was on a mission.”**

– Doug Oberhelman, Chairman and CEO

What happened next changed the world. In just 40 years, China emerged as the world’s second-largest economy, and Caterpillar is proud to have been there every step of the way. Whether it’s energy, agriculture, transportation, research, architecture, finance or tourism – we helped build the infrastructure and resources that helped make China’s prosperity possible today. In 2015, Caterpillar, along with our Chinese dealers, suppliers and customers, marked our 40th

anniversary in the country with a yearlong campaign. The theme, “Building a Beautiful China,” highlighted our many contributions to the country under the sub-themes of partnership, community and life.

**Partnership** refers to Caterpillar’s support for Chinese customers, dealers, suppliers and other partners. A big part of our commitment is integrating local resources and fostering our relationships with Chinese suppliers to increase the competitiveness of our global supply network. Additionally, our mature dealer model has earned an unparalleled level of trust. Dealers work closely with our customers, many of whom are small entrepreneurs who are building their own businesses and continuing to transform the Chinese economy. And to support them, Cat Financial makes projects possible by working with customers to get them the machines they need – when they need them.

**Community** refers to our contributions to the communities where we live and work, and specifically to the sustainability aspect of the contributions. Caterpillar has built prosperity in China, improving the standard of living for hundreds of millions of people. In turn, demand for energy, as well as demand on the environment, have increased. Addressing both issues, Caterpillar is instrumental in China’s green energy production. Our machines helped to build the world’s largest hydroelectric power station and the largest water transfer project, plus a west-to-east natural gas pipeline to support growing need.

Supporting needs on a grassroots level, our employees in China are eager to give back to their communities and drive positive change.

**Life** refers to people, internally and externally, our investment and efforts in training our 13,000 Chinese employees, customers and partners in general. Throughout the year, with our events and promotions, we delivered these messages through stories, videos and speeches. To our Chinese suppliers, in particular, we offer vast opportunities for business training, technical exchanges, joint research and development, and corporate culture development. The introduction of production systems and advanced *(Continued on page 41)*

### INTEGRATING CUBA INTO THE GLOBAL ECONOMY

For nearly 20 years, Caterpillar has strongly advocated for United States engagement with Cuba. Our Government Affairs and International Trade Legal Services team encouraged the United States government to re-establish diplomatic relations with Cuba. This past summer, the American flag finally flew again over the United States embassy in Havana.

We encourage the President and Congress to work together on the next step – ending the 55-year embargo and travel restrictions against Cuba. The time is now to move forward for the benefit of both our nations and to integrate Cuba into the global economy.



## Beautiful China (continued)

management philosophies such as 6 Sigma has resulted in a number of our Chinese suppliers' emerging as leaders in local industries. Some have expanded their businesses beyond China, constructing facilities abroad and supplying Caterpillar globally, using the skills they garnered from our training efforts.

The yearlong anniversary celebration culminated in the final event in Xuzhou, where we showcased our latest technology and shared our long-term vision for Caterpillar and for China, demonstrating our commitment to this market and pledging another 40 years of mutual growth and success.

**"In the first 18 months in Xuzhou, all I did was work and sleep. But it paid off. The first 325 excavator built in Xuzhou came off the assembly line in the new plant on July 4, 1997."**

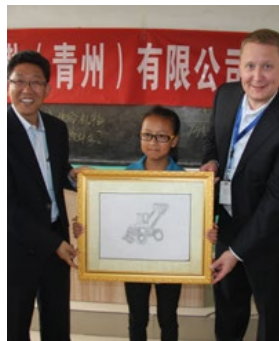
— Ed Gramme, first general manager for Caterpillar Xuzhou Ltd.

## China Employees Give Back During Global Month of Service

China employees participated in the first Global Month of Service in September 2015. Over the past five years, more than 3,000 China employees, plus more than 1,000 of their family members, friends and dealer employees, have volunteered across China.



**Beijing:** Twenty-three employee volunteers, along with relatives and friends, cared for trees in the Caterpillar Foundation Charity Forest.



**Qingzhou:** Fourteen volunteers visited rural Tuoshan Primary School with a psychological consultation teacher to deliver donated books and free counseling to help students meet challenges with a positive attitude.



**Suzhou:** Fifteen volunteers and family members accompanied 15 children from the Wuzhong Welfare House for children with disabilities on a day trip around East Tai Lake. The day ended with a birthday party for one of the students, six-year-old Yanjun Wu.



**Shanghai:** For many years, employees from the Global Supply Network team have volunteered at the rural Watuo Primary School in one of the poorest areas of China. The Human Services team joined them in making a donation to purchase stationery for the students.



**Tianjin:** Employees from Asia Power Systems and the Shared Services Center, 70 in all, held a donation event for Concentric Hope Home, which provides community services for migrant women and their families. Employees donated more than 800 articles of clothing and shoes, as well as other items.



**Tongzhou:** Ten volunteers joined "Tiny Wish," an assistance program to grant wishes for needy families. They visited a boy who suffers from muscle atrophy and granted his simple wish for a new set of clothes, as well as offering to teach him to read.



**Wuxi:** More than 50 volunteers from the Caterpillar Research & Development Center donated about 600 children's books, notebooks, puzzles, stuffed toys and electronics to Zhangzhen Migrant School. They later visited to deliver courses in English, safety awareness and Chinese classic poetry.



**Xuzhou:** Thirty-one volunteers from Paving Products and Undercarriage visited students at the Pengcheng Special Education School for mentally disabled children, whom they have supported for more than 10 years. They played basketball, helped with art projects and donated food for the children.





## PEOPLE

## WORK THAT MATTERS

As we reflect on a year of innovation and change, we are reminded of who make it all possible – our employees. The core of Caterpillar has always been, and will always be, the men and women who work here. We are global leaders because our services and products reflect the very essence of our employees – innovative, reliable and of the highest quality.

At Caterpillar, no task is small, no job is minor. Here, big ideas come to life step-by-step, piece-by-piece, person-by-person. Team members come together to produce groundbreaking, world-changing innovations. What we collectively achieve raises the standard in our industries and enables powerful work to be done all across the globe. And it starts with the people who choose to work at Caterpillar. We know our employees power our success and we are committed to empowering theirs.

We applaud our extended team for another year of doing hard work that matters.

To showcase the rich diversity, passion for life and strong work ethic present in our Caterpillar family, we began the Real Cat Folks project. Inspired by Humans of New York, the project highlights that Caterpillar employees are real people – with real families, real pasts, real dreams and real stories.

## HARRY – UNITED STATES

My family is my legacy. I've raised four daughters by myself since 1999. The most important thing I've taught them is that they can achieve anything. Life is just a stepping stone and you have to look at it in a good, positive way. Caterpillar gave me a chance after being unemployed for five years. I never thought they'd hire me because of my age. When my youngest was having a rough time, I told her to fill out an application. The next thing I knew, she was hired on full time after three months of being an agency worker. Today she's a team lead, going strong and learning as much as she can. I'm very proud of her.



## SUSHMA – INDIA

I am associated with a startup organization which organizes lunch and outdoor treats for children who live in various orphanages across Chennai. The treats are given on special occasions like birthdays and anniversaries. I am part of this team and we are planning to expand more as we grow and get help from various people.

**MICHAEL – UNITED STATES**

I believe the keys to success are laughter, understanding, forgiveness and building relationships. I started a sauce company about four years ago, Carolina Mikes Sauce Company.

I'm originally from South Carolina and I love to cook and feed people, and make people feel good about who they are.

**TALHA – UNITED ARAB EMIRATES**

Growing up, I always saw my parents as positive and happy in both good and bad times. They taught us two rules in life: One, the most important thing in life is family. If you have things sorted out in your personal and family life, you will perform well at work. Two, be happy with what you have today while you work for what you want tomorrow.

**YOUXIANG ZHANG – CHINA**

I grew up on a cotton field on the coast and came to Suzhou for school. Suzhou is a beautiful city with the combination of modern industry and ancient history. I like to spend my spare time playing soccer and climbing mountains in the neighborhood. I've always wanted to learn to play guitar and want to play for my son in the future. He's 14 months old, and my biggest wish is to watch him grow up happily.

张友祥

我从小成长在海岸边，小时候常常在棉花田里玩耍。长大后来到苏州求学，并在这里工作。苏州是一个现代工业和古代历史结合的美丽城市。我喜欢在业余时间踢足球，在周边郊游、爬山。我一直想学弹吉它并且希望将来能弹给儿子听。他现在已经14个月大了，我最大的愿望就是看着他健康的长大。



Visit [caterpillar.com/RealCatFolks](http://caterpillar.com/RealCatFolks) to see dozens of published profiles, and check back weekly for updates.

## PEOPLE

## A GOOD DEED IN THE BADLANDS



Each day, Caterpillar employees and dealers all over the world live Our Values in Action in tangible ways that make a real difference in people's lives. To fully appreciate how this happens requires a trip to remote Oglala County, South Dakota – one of the most impoverished counties in the United States – where the Chanku Waste ministry is working to address the needs of at risk youth and their families.

There, one late afternoon, as Chanku Waste Ranch camp leader Matt Hadden was driving a bus full of kids home for the day, Matt was astonished to see a brand-new Cat® 416 backhoe loader roll in – a much-needed donation that is helping create better living conditions and opportunities for the community.



Chanku Waste Ranch is a summer camp for kids on the Pine Ridge Reservation in the South Dakota Badlands. Life on the reservation can be hard, with an estimated 60 percent of the homes severely substandard without one or more basic necessities such as running water, electricity and operational sewage systems. The camp's outreach to Lakota families inspired Caterpillar employee Brad Kough to start looking for a way to help. Soon, Brad, along with other employees and their families, had raised donations for the ranch, but it wasn't until Brad was connected with a fellow employee, Todd Lange, that everything came together. Through Todd and the contribution of Caterpillar's Building Construction Products Division, the group purchased a brand new backhoe loader. Then Cat® dealer Butler Equipment stepped in to donate delivery expenses and some pre-delivery work.

Kough recalls the enthusiasm that surrounded the machine's arrival: "The kids couldn't believe that it was for them and the camp. Normally donations tend to have seen better days, but this beauty was brand new! News spread fast throughout the community and it was humbling to see the excitement it brought."

In addition to helping bring much needed repair and basic necessities to local homes, the camp is also using the backhoe loader to train young people on the operation and maintenance of heavy machinery. For some, like Ilijah, the first young man to receive this training, it is an eye-opening experience to learn about job opportunities around the world for someone who knows how to operate a machine like the Cat 416. Kough said, "His eyes lit up as you could see him begin to dream about the possibilities this might open up for his life. It was a very proud moment for me and the other Caterpillar employees who were there. We feel blessed to be a part of this special project."

Find out more about Chanku Waste Ranch [here](#).



## PEOPLE

## FROM DESIGN TO THE FACTORY FLOOR, TEAMS EMPLOY LEAN AND AGILE TO DELIVER FOR CUSTOMERS

To help customers take their businesses to the next level, teams from the Advanced Components and Systems Division (ACSD) are collaborating to improve quality and efficiency.

In the office, software engineers are coming together in Agile teams to bring innovative solutions to our customers faster than the competition. Agile is Lean for software development. But more specifically, Agile software development is a set of principles for software development in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. These cross-functional teams learn from customers what features and solutions are needed and how they are valued. Then they leverage their diverse knowledge, experiences and skill sets to develop and deliver creative solutions. This flexible process helps teams mitigate project risks and deliver value more rapidly.

"We've really seen the benefits of changing our mindset," says Alex Kott, ACSD 6 Sigma Master Black Belt. "High-performing teams are stronger than any one individual. Face-to-face collaboration, frequent feedback and knowledge sharing helps us develop better products."

On the shop floor, production employees are embracing Lean principles like Built in Quality (BIQ) to find defects before they reach customers. BIQ employs strategically placed "quality gates" to check for and find defects, stop them from moving on and initiate a fix. When operators find defects at quality gates, the operators are part of the problem solving process. Operators now have a more holistic view of their work: They know that their "customer" is the next process downstream from them, and they are careful to send quality products down the line.

Leaders are encouraging employees to voice their concerns and bring up ideas for improvement. Production leaders then have a responsibility to address those ideas and report back to employees on what has been done. This Lean culture is making a difference.

"There's no doubt that Lean has contributed to our improvements in quality, velocity and safety," states Steve Ferguson, ACSD global operations general manager. "In 2015 alone, quality in our factories improved 27 percent; we achieved a committed shipping performance of 99 percent; and we had a record-low recordable injury frequency of 0.12."

**"It's the mindset of improving collaboration by knocking down walls. It's amazing what can be done when you get everyone in a room working together, building off each other's ideas."**

— Alex Kott, Caterpillar 6 Sigma master black belt

**1959** Caterpillar established the **LOUIS B. NEUMILLER SAFETY AWARD** to recognize an outstanding achievement in safety. The Decatur, Illinois, plant received the first Louis B. Neumiller Safety Award. Elected president of the company in 1941 and Chairman of the Board in 1954, Neumiller had great concern for employee welfare and safety over the years, often stating **"SAFETY IS ALWAYS OUR NO. 1 BUSINESS."** Our company's oldest executive office recognition is now known as the Chairman's Health & Safety Award.





## PEOPLE

## CATERPILLAR FOUNDATION

**ALLEVIATING  
POVERTY**

Our mission is to eliminate poverty by **placing people on a path to prosperity.**

This **builds strong economies and communities.**

We focus our efforts on **basic human needs, education and the environment.**

We accomplish our mission **through an innovative approach that addresses the root causes of poverty and facilitates collaboration among the public, private and nonprofit sectors.**

**Together.Stronger.™**

**THE ONE CAMPAIGN & U.N. FOUNDATION ENERGY POLICY**

This past year, the Caterpillar Foundation supported energy access policy work through investments with The ONE Campaign and United Nations Foundation. The Foundation believes energy access in Africa plays a significant role in disrupting the spiral of poverty. The ONE Campaign's advocacy work around the Electrify Africa Act, a bill unanimously passed in the U.S. Senate, the U.S. House of Representatives, and signed into law by President Obama in early 2016, will spur the U.S. government to create investment opportunities to bring 50 million Africans power by 2020. Likewise, three billion people globally rely on solid fuels to cook, causing serious environmental and health impacts, disproportionately affecting women and children. The U.N. Foundation's policy work is focused on promoting clean cooking solutions and universal adoption of clean cookstoves and fuels. The Foundation also provided three grants in Kenya, Ghana and Uganda to help address the market barriers that impede the production, deployment and use of clean and efficient cookstoves and fuels in developing countries. **Together.Stronger.™**

**OPPORTUNITY INTERNATIONAL** Opportunity International provides microfinancing and education to help lift people out of poverty by giving disadvantaged populations a working chance. In support of their work, last year we invested in agricultural programs in Ghana, Rwanda and Uganda, and educational programs in Colombia, Ghana and Uganda. The agricultural programs provide banking services, financial education and training, and agricultural inputs to smallholder African farmers to help put them on a level playing field with larger farmers. The education programs are focused on providing loans and training to expand and improve schools, and ultimately, improve access to high-quality education. **Together.Stronger.™**

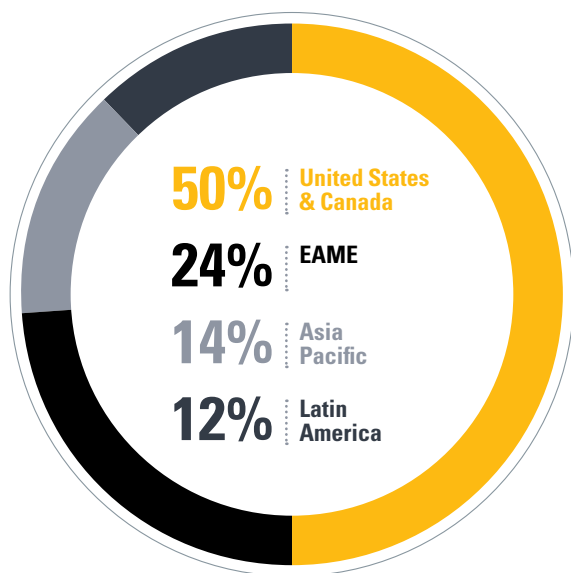


**HABITAT FOR HUMANITY** In 2015, the Caterpillar Foundation supported Habitat for Humanity through grants across nine communities in the United States (Tucson, Arizona; Hartford, Connecticut; Miami, Florida; Peoria, Illinois; Franklin, Indiana; Raleigh, North Carolina; Houston, Texas; Victoria, Texas; and Menominee, Wisconsin) and in Thailand.

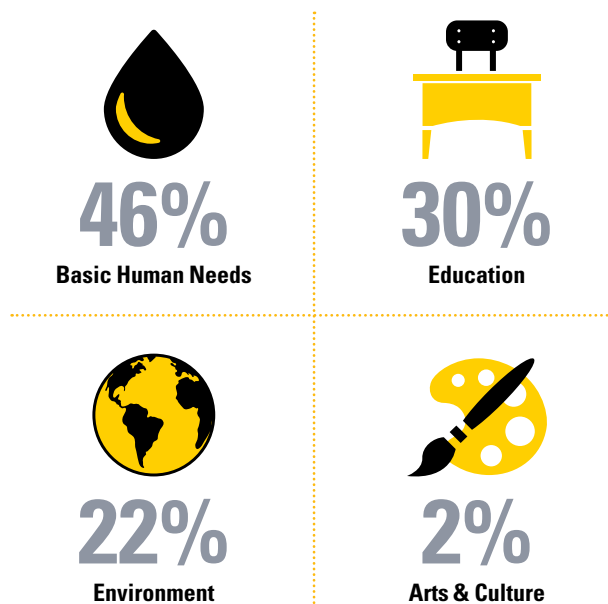
In addition, in a separate project, Caterpillar employees at the Morton, Illinois, facility sponsored a Habitat for Humanity house for a deserving family in the local community. Approximately 500 employees across the facility volunteered their time and talents over a 10-week period to build the house. **Together.Stronger.™**

## \$46 MILLION INVESTED IN OUR COMMUNITIES

Total Investments by Region

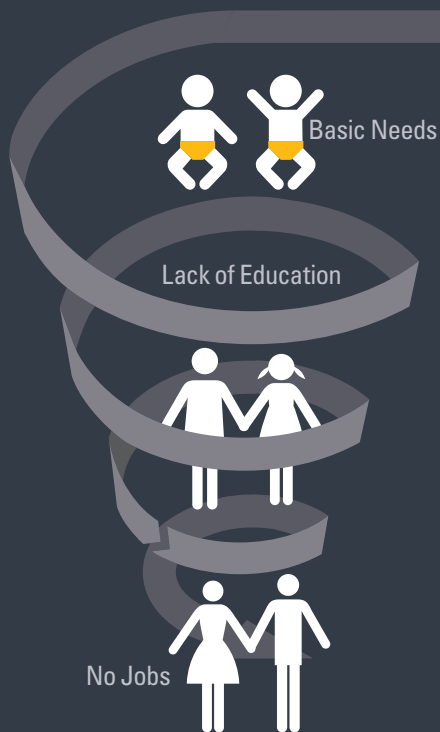


## AREAS OF INVESTMENT



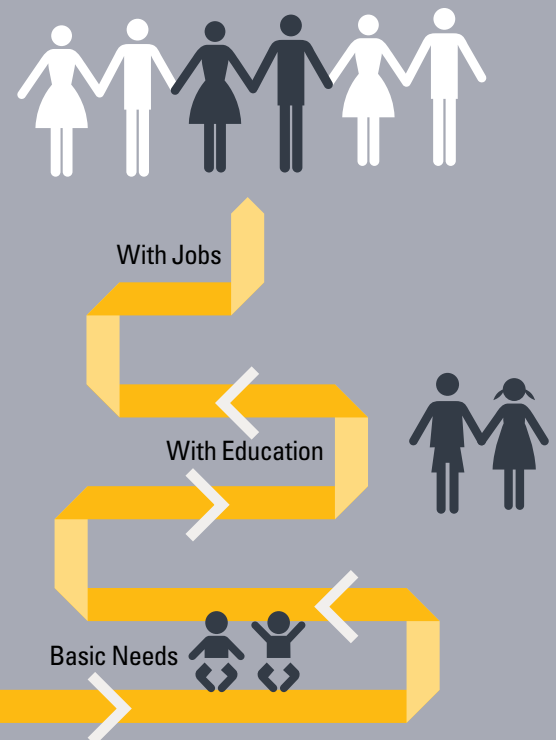
EMPLOYEE DONATIONS  
+  
CATERPILLAR FOUNDATION DOLLAR-FOR-DOLLAR MATCH TO UNITED WAY  
=  
**\$13 million**

## PATH TO PROSPERITY



The spiral of poverty repeats across generations.

The path to prosperity results in active community leaders who are able to help others.



## HOW WE WILL GET THERE

### VIA OUR STRATEGIC INVESTMENTS AND PARTNERSHIPS

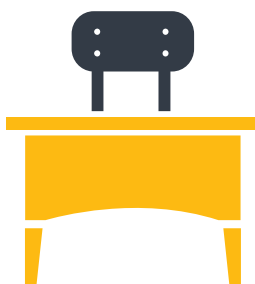
When we invest and partner strategically and effectively, basic needs are met, education is attained, jobs are created and economies grow.



### BASIC HUMAN NEEDS

---

Food  
Water  
Shelter  
Energy  
Disaster Relief



### EDUCATION

---

Numeracy & Literacy  
Workforce Readiness  
Mentoring & Leadership



### ENVIRONMENT

---

Rebuilding Natural  
Infrastructure





## OUR PARTNERS

Our philanthropic partners are making profound changes throughout the world.  
Our investments enable them to scale their impact.



# Together.Stronger.™

## STAY CONNECTED TO OUR PROGRESS

To learn more about the Caterpillar Foundation and our partners, please visit [togetherstronger.com](http://togetherstronger.com).

# BUSINESS REVIEW



For 90 years, Caterpillar Inc. has been making sustainable progress possible and driving positive change on every continent. Customers turn to Caterpillar to help them develop infrastructure, energy and natural resource assets. With 2015 sales and revenues of \$47.011 billion, Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. The company principally operates through its three product segments – Construction Industries, Resource Industries and Energy & Transportation, and also provides financing and related services through its Financial Products segment.

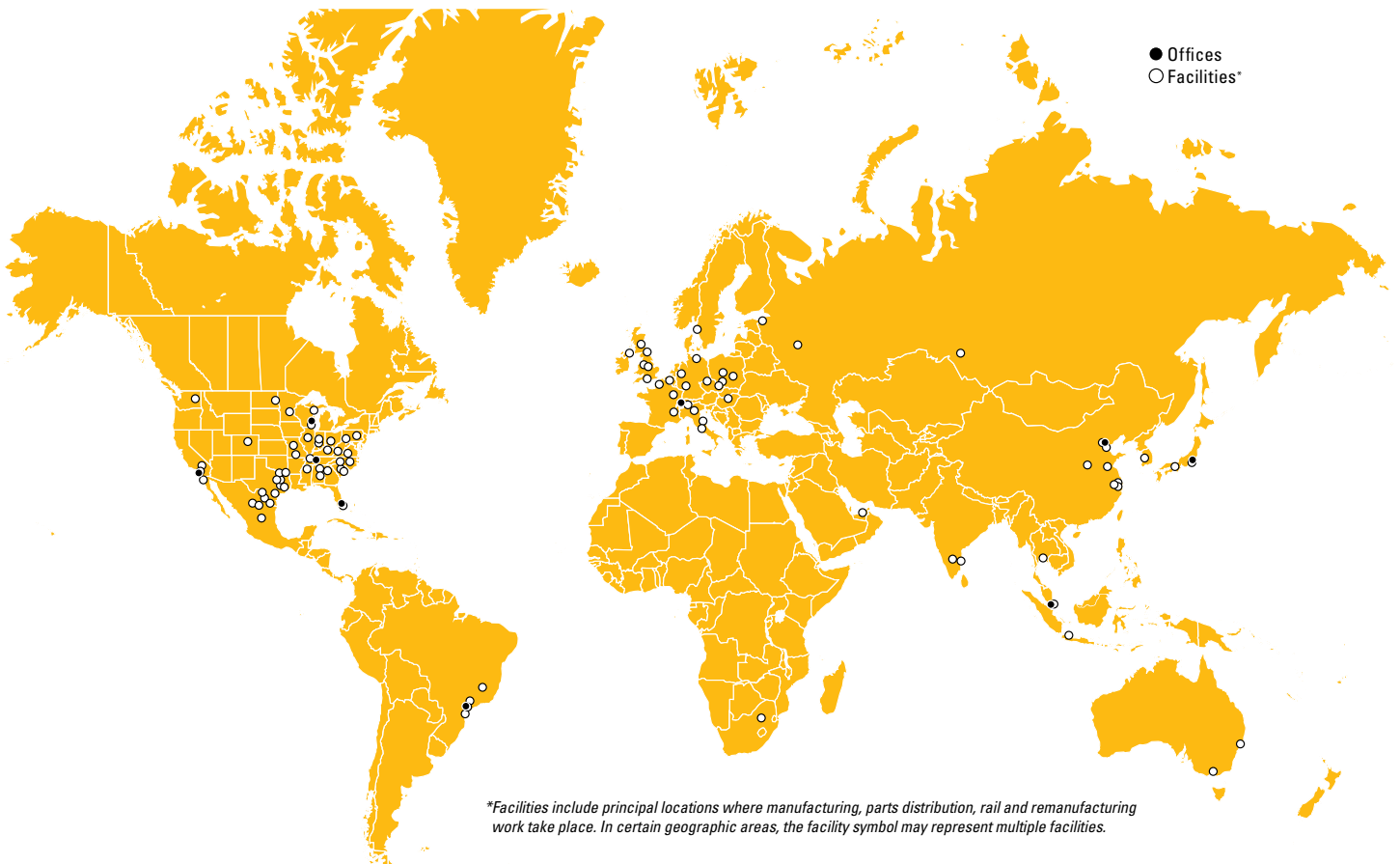
---

## IN THIS SECTION:

- [At-a-Glance](#)
- [Performance](#)
- [Segment/Division Review](#)
- [Five-Year Financial Summary](#)
- [Forward-Looking Statements](#)

## BUSINESS REVIEW

### AT-A-GLANCE



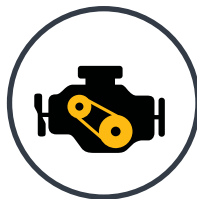
### Product Line



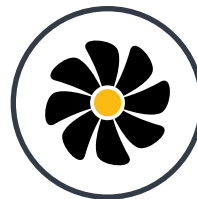
Construction



Mining  
Equipment



Diesel & Natural  
Gas Engines



Industrial  
Gas Turbines



Diesel-Electric  
Locomotives



**3Million+**  
Products at Work  
Around the World



**105,700**  
Employees



**59%**  
Sales and Revenues  
Outside the United States

## BUSINESS REVIEW

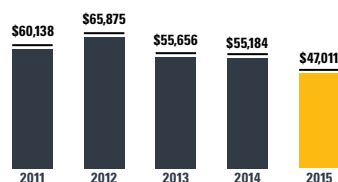
# PERFORMANCE



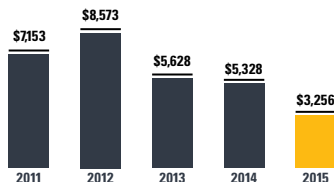
## FINANCIAL PERFORMANCE

While sales and revenues remained under pressure from weak commodity prices and slowing economic growth in developing countries, our financial performance was helped through cost management, restructuring actions and operational execution. Our product quality remained at high levels; we gained market position for machines for the fifth year in a row; inventory levels declined and our safety levels continued to be world class. We stayed focused in the right areas by delivering solid cash flow, maintaining a strong balance sheet and credit rating and increasing the dividend.

### CONSOLIDATED SALES AND REVENUES (\$ IN MILLIONS)



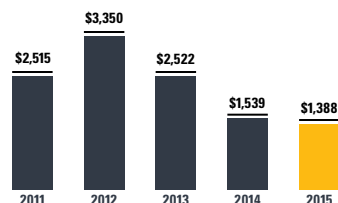
### OPERATING PROFIT (\$ IN MILLIONS)



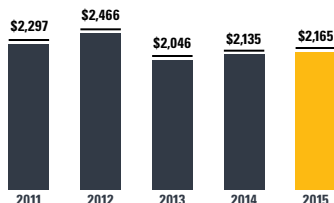
### CONSOLIDATED SALES AND REVENUES BY SEGMENT (\$ IN MILLIONS)



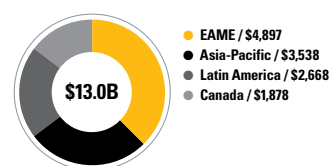
### CAPITAL EXPENDITURES (EXCLUDES EQUIPMENT LEASED TO OTHERS) (\$ IN MILLIONS)



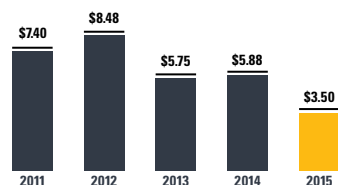
### RESEARCH AND DEVELOPMENT (\$ IN MILLIONS)



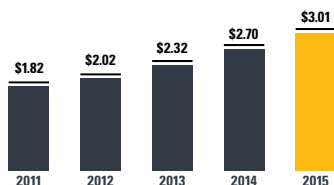
### 2015 EXPORTS FROM U.S. BY REGION (\$ IN MILLIONS)



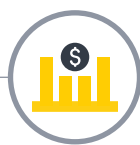
### PROFIT PER SHARE (DILUTED)



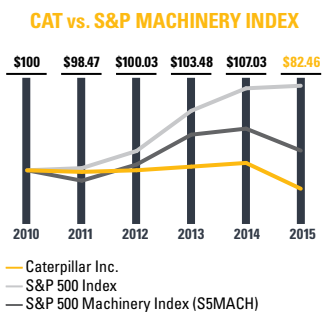
### DIVIDENDS DECLARED (PER SHARE)





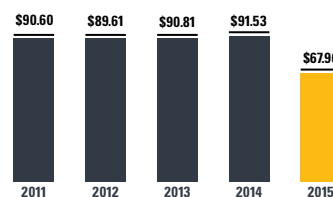


## MARKET PERFORMANCE



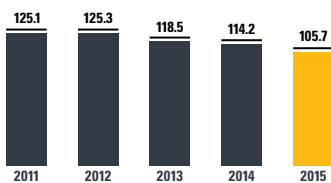
Cumulative stockholder return assuming an investment of \$100 on December 31, 2010 and reinvesting of dividends issued thereafter.

**5-YEAR CLOSING STOCK PRICE  
(IN DOLLARS)**

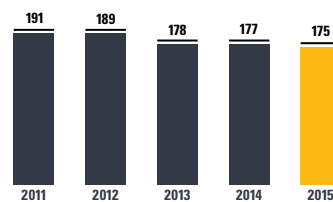


## BUSINESS PERFORMANCE

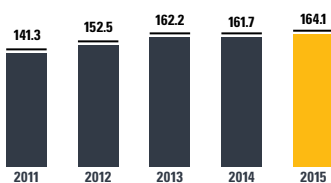
**GLOBAL EMPLOYEES  
(AT YEAR-END)**



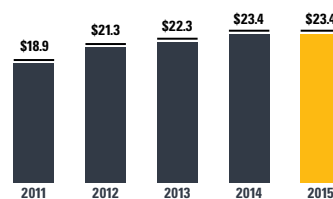
**GLOBAL CAT® DEALERS**



**DEALER EMPLOYEES  
(IN THOUSANDS)**



**DEALER NET WORTH  
(\$ IN BILLIONS)**





## 2015 GLOBAL PERFORMANCE BY REGION

## NORTH AMERICA



**53**  
Dealers



**48,000**  
Caterpillar  
Employees

**2015 Sales and Revenues  
by Segment**  
(\$ in millions)



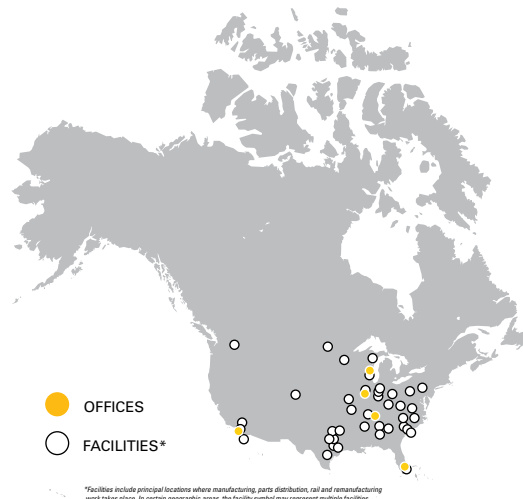
**\$8,084**  
Construction  
Industries

**\$7,759**  
Energy &  
Transportation

**\$2,820**  
Resource  
Industries

**\$1,812**  
Financial  
Products

**\$1,350**  
All Other



## EAME

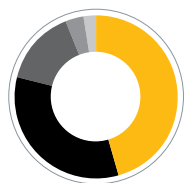


**47**  
Dealers



**21,300**  
Caterpillar  
Employees

**2015 Sales and Revenues  
by Segment**  
(\$ in millions)



**\$5,270**  
Energy &  
Transportation

**\$3,808**  
Construction  
Industries

**\$1,741**  
Resource  
Industries

**\$408**  
Financial  
Products

**\$275**  
All Other





## 2015 GLOBAL PERFORMANCE BY REGION

## ASIA PACIFIC

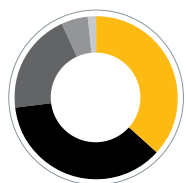


**43**  
Dealers



**24,100**  
Caterpillar  
Employees

**2015 Sales and Revenues  
by Segment**  
(\$ in millions)



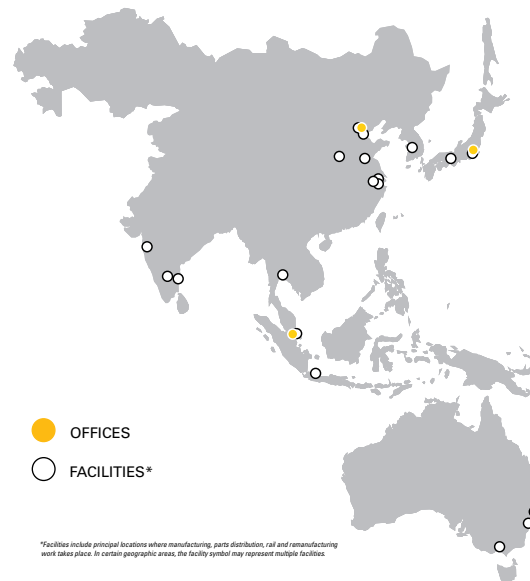
**\$3,275**  
Energy &  
Transportation

**\$3,227**  
Construction  
Industries

**\$1,774**  
Resource  
Industries

**\$458**  
Financial  
Products

**\$148**  
All Other



## LATIN AMERICA



**32**  
Dealers



**12,300**  
Caterpillar  
Employees

**2015 Sales and Revenues  
by Segment**  
(\$ in millions)



**\$1,634**  
Energy &  
Transportation

**\$1,449**  
Construction  
Industries

**\$1,216**  
Resource  
Industries

**\$400**  
Financial  
Products

**\$103**  
All Other



## BUSINESS REVIEW

## CONSTRUCTION INDUSTRIES



A Conversation With

**TOM PELLETTE**

**Group President, Construction Industries**

Construction Industries is built to support customers using machinery in infrastructure and building construction applications. The majority of machine sales in this segment are made in the heavy and general construction, rental, quarry and aggregates markets and mining. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales, and product support. The product portfolio includes backhoe loaders; compact, small and medium wheel loaders; small and medium track-type tractors; skid steer loaders; multi-terrain loaders; compact track loaders; small, medium and large track excavators; mini excavators; wheel excavators; motor graders; select work tools; pipelayers; track-type loaders; mid-tier soil compactors; telehandlers and related parts.



**What are some examples of efficiency gains in your business?**

We use constraints to make great things happen with fewer resources. Take the Last Mile Freight Program: We got together with our dealers and instead of getting multiple groups involved with our products' outbound freight, Caterpillar handles that alone, and it's driven a lot of cost out of the business.

Another example is how the Excavation Division is using the New Product Introduction process to emphasize modularity and common platforms in their Next Generation excavators. This takes costs out of the product in both the new equipment side and the aftermarket support side, lowering both the cost of our product and the cost of providing a service to our customers.

**Why is big data and innovation so important to Caterpillar at this time in our history?**

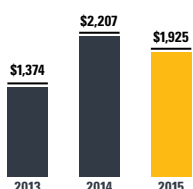
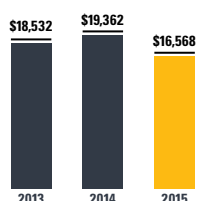
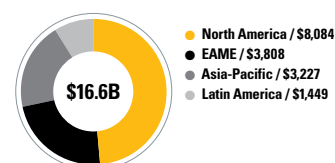
Data and technology will be core to serving our customers in the future. Equipment and technology are becoming table stakes, but using that technology to add value and make our customers more successful will be the key to who wins and who loses. Caterpillar does this through innovations Cat® GRADE with Cat® Slope Assist, VisionLink®, Payload and all the other great offerings under Cat® Connect – that's where data and technology add value for our customers.



A Conversation With

**TOM PELLETTE** Group President, Construction Industries (continued)**What is the strategic importance of this sector to Caterpillar's long-term business prospects?**

As the global population grows, the need for infrastructure will grow too. We often say that the road to progress begins with a road, period. Construction is really at the heart of Caterpillar, and construction industries are right in the middle of building roads, bridges, ports and airports that allow mankind to continue to improve lives around the world.

**SEGMENT PROFIT**  
(\$ IN MILLIONS)**SALES**  
(\$ IN MILLIONS)**SALES BY GEOGRAPHY**  
(\$ IN MILLIONS)**END MARKETS INCLUDE:**

**Building Construction**  
**Roads and Highway Construction**  
**Infrastructure Projects**

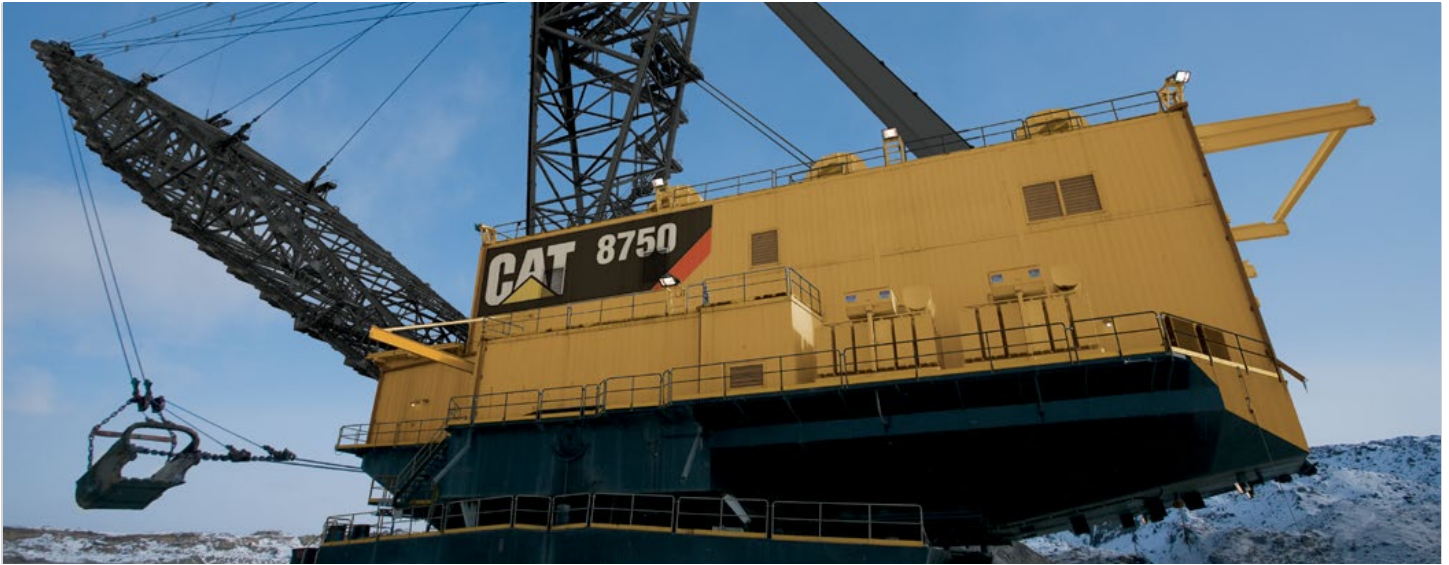
**PRODUCTS**

**Backhoe Loaders**  
**Compact, Small and Medium Wheel Loaders**  
**Small and Medium Track-type Tractors**  
**Skid Steer Loaders**  
**Multi-terrain Loaders**  
**Compact Track Loaders**  
**Small, Medium and Large Track Excavators**  
**Mini Excavators**

**Wheel Excavators**  
**Motor Graders**  
**Select Work Tools**  
**Pipelayers**  
**Track-type Loaders**  
**Mid-tier Soil Compactors**  
**Telehandlers**

## BUSINESS REVIEW

## RESOURCE INDUSTRIES



A Conversation With

**ED RAPP**

**Group President, Resource Industries**

Resource Industries is built to support customers using machinery in mining and quarrying applications. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes large mining trucks, off-highway trucks, electric rope shovels, wheel tractor scrapers, hydraulic shovels, large track-type tractors, large wheel loaders, track and rotary drills, articulated trucks, hard rock vehicles, longwall miners, draglines, highwall miners, wheel dozers, continuous miners, scoops and haulers, hardrock continuous mining systems, machinery components, select work tools, electronic and control systems and related parts.



**Why do you think Caterpillar's business continues to stand the test of time?**

It's not the biggest or strongest companies that survive – it's those that adapt, those that evolve their business to address changing economic environments and changing customer requirements. Customers today, for example, demand higher levels of productivity, and we address that through our product development; or customers struggle to find qualified operators and we're bringing completely autonomous trucks or semi-autonomous tractors.

**What are the most important qualities that our people possess?**

As I travel the world and meet people new to the company, I ask about their experience since joining Caterpillar. Consistently, I hear that for them, the best part is our values. We not only treat our employees based on our values, but also extend them through our value chain out to our suppliers, dealers and customers. When people ask me who I work for, I proudly say Caterpillar. The foundation of that is our values.

A Conversation With

**ED RAPP** Group President, Resource Industries (continued)

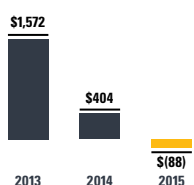
### What's the message to employees as we manage through this business cycle?

In my 36-plus years with the company, you always find out who you are in the toughest of times. Anybody can manage an upturn. But when you go through a decline in the industry, it does test you as a leader. We're all going to find out how we lead and how we motivate by managing through a challenging period.

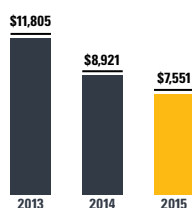
### When do you see a turnaround for Resource Industries?

There's a lot of talk today about mining being depressed, but my standard line is, "Mining's depressed, but I'm not." It's not about when mining's going to turn around – it's about all of the things we can do now to make sure that when mining does turn around, we're ready. Over the long haul, we serve great industries. As we see global population growth and urbanization, these are industries that will provide the input to allow that growth to take place.

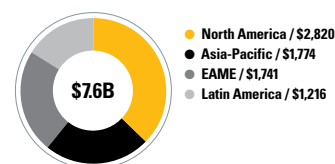
**SEGMENT PROFIT/(LOSS)**  
(\$ IN MILLIONS)



**SALES**  
(\$ IN MILLIONS)



**SALES BY GEOGRAPHY**  
(\$ IN MILLIONS)



#### END MARKETS INCLUDE:

**Mining**  
**Quarrying**



#### PRODUCTS

<b>Large Mining Trucks</b>	<b>Longwall Miners</b>
<b>Off-Highway Trucks</b>	<b>Draglines</b>
<b>Electric Rope Shovels</b>	<b>Highwall Miners</b>
<b>Wheels Tractor Scrapers</b>	<b>Wheel Dozers</b>
<b>Hydraulic Shovels</b>	<b>Continuous Miners</b>
<b>Large Track-Type Tractors</b>	<b>Scoops and Haulers</b>
<b>Large Wheel Loaders</b>	<b>Hardrock Continuous Mining Systems</b>
<b>Track and Rotary Drills</b>	<b>Machinery Components, Select Work</b>
<b>Articulated Trucks</b>	<b>Tools, Electronic and Control Systems</b>
<b>Hard Rock Vehicles</b>	

## BUSINESS REVIEW

## ENERGY &amp; TRANSPORTATION



A Conversation With

**D. JAMES UMPLEBY III**

**Group President, Energy & Transportation**

Energy & Transportation supports customers in oil & gas, power generation, marine, rail and industrial applications, including Cat® machines. The product and services portfolio includes reciprocating engines, generator sets, marine propulsion systems, gas turbines and turbine-related services, diesel-electric locomotives and other rail-related products and services.



**What is the strategic importance of the Energy & Transportation group to Caterpillar's long-term success?**

Energy & Transportation brings diversity and growth potential to Caterpillar by serving a number of different industries, including oil and gas, power generation, marine, rail and general industrial applications. For example, we provide a variety of different products and services across a wide portion of the natural gas value chain, including offshore and onshore gas drilling and exploration, gas production and pipeline compression. We also use natural gas as a fuel in our reciprocating engines and gas turbines to produce electrical power.

**With the continued low price of oil, what are some of the opportunities and challenges facing our customers?**

In this challenging environment, our customers are seeking ways to become more efficient. We continue to invest in R&D to improve the efficiency of our engines and gas turbines. We are also expanding our offering of digital technologies. For example, Solar™ Turbines' Insight System™ helps customers maximize production and minimize cost by preventing failures before they occur.



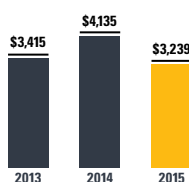
A Conversation With

**D. JAMES UMPLEBY III** Group President, Energy & Transportation (continued)

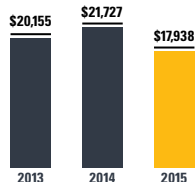
## How are our Energy & Transportation businesses contributing to sustainable development around the world?

Caterpillar and its dealers are working with our customers to meet the current and future energy needs of the global population in an environmentally sustainable manner. There are many different examples of our commitment to the environment, including our continuing R&D investments to reduce emissions from our engines and gas turbines, burning landfill and coke oven gasses in our engines and gas turbines to produce electricity, and our recent introduction of Cat branded solar panels, energy storage and controls for microgrids.

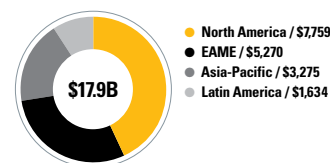
**SEGMENT PROFIT**  
(\$ IN MILLIONS)



**SALES**  
(\$ IN MILLIONS)



**SALES BY GEOGRAPHY**  
(\$ IN MILLIONS)



### END MARKETS INCLUDE:

Oil & Gas  
Power Generation  
Marine  
Rail  
Industrial



### PRODUCTS

Reciprocating Engines  
Generator Sets  
Marine Propulsion Systems  
Gas Turbines  
Turbine-Related Services  
Diesel-Electric Locomotives

## BUSINESS REVIEW

## CUSTOMER &amp; DEALER SUPPORT



A Conversation With

**ROBERT B. CHARTER****Group President, Customer & Dealer Support**

Customer & Dealer Support is built to strengthen Caterpillar's product support excellence by bringing a strong focus to Cat® equipment and customer service and delivering outstanding dealer development. This group supports customers and dealers in a variety of ways, such as providing employee equipment training on job sites, supplying aftermarket parts and service support and offering e-business and equipment management solutions. The segment also includes the product portfolio for forestry, paving, industrial and waste products, and global on-highway trucks. This group is also responsible for dealer development and administration of a wholly-owned dealer in Japan. Key strengths are the ability to manufacture parts and components, provide remanufacturing solutions and deliver unmatched parts availability to dealers and customers anywhere in the world.

**You just completed your first year as a group president for Caterpillar. What did you learn in your first year?**

It was a challenging year in terms of the industries we serve, but despite the challenges, I was pleased to see how focused our employees continued to be.

**Where do you think that we excel?**

I love our end-to-end structure. I think it's one of the best things we've done in the many years that I've been associated with Caterpillar. The art in our organization is managing the matrix well, using the synergy and the volume across the organization, and then bringing that focus to meet the needs of our customers. Getting those two things right really makes a difference. In this new role, I get a much broader look at how well we do when we're pulling in the same direction.

A Conversation With

**ROBERT B. CHARTER** Group President, Customer & Dealer Support (continued)

### How well have we executed Across the Table?

We really introduced the Across the Table concept to our dealers at the beginning of 2014 and spent most of that year aligning and understanding the initiatives in order to discover how we deliver consistent service that's world class. We've made great progress. Our dealers are aligned and engaged as we work toward our 2018 goals. 2015 was our first year of real execution, but there's more to do, so in 2016 and 2017 we want to continue those efforts to stay on track.

### What are the top concerns and opportunities for our dealers?

Dealers around the world see the same things as we do inside Caterpillar. They have the same concerns about our cyclical end markets, particularly mining and oil. They're really trying to resize their businesses to be efficient and deliver great service to their customers. It's very, very similar to what we see inside Caterpillar.

## BUSINESS REVIEW

## FINANCIAL PRODUCTS &amp; CORPORATE SERVICES



A Conversation With

**BRADLEY M. HALVERSON**

**Group President, Financial Products & Corporate Services, Chief Financial Officer**

Financial Products is built to provide financing to customers and dealers for the purchase and lease of Cat® equipment, as well as financing for Cat® product sales to dealers. Financing plans include operating and finance leases, installment sale contracts, working capital loans and wholesale financing plans. Financial Products provides various forms of insurance to customers and dealers to help support the purchase and lease of our equipment. Corporate Services provides business and human resources, information technology, accounting and finance services to Caterpillar, serving as the enterprise resource for business-related activities.



**What is different about the current downturn compared to others in our history?**

In 2009, we had a 37 percent decline in our sales and revenues. It happened fast, and then we had a recovery. This is different. As we look at 2016, we're on the fourth year of a decline in sales, and it's our job to manage at the sales level that we have at this moment in time. We have a U.S. economy that is not showing great growth. We have developing countries, such as Brazil and China, at very low levels in terms of our industry. Clearly, mining companies, in terms of commodities, have suffered greatly. The good news is Caterpillar is in a strong position to handle an increase in business. This downturn is the right opportunity to focus on critical initiatives like Digital, Lean and Across the Table.

**What provides you with the most confidence about our position?**

We have the best people. We hire, develop and train the absolute best workforce in any industry, any company, in my view. That's clearly a differentiator. As a result, we have quality products and are gaining market position for machines. Because of our good operational performance in this downturn, we have a very strong balance sheet, which gives us flexibility to look for growth opportunities. Even in these tough times, we've continued to have very high levels of research and development for new products and other initiatives, such as our digital spend, Across the Table and Lean.



A Conversation With

**BRADLEY M. HAVERSON** Group President, Financial Products & Corporate Services, Chief Financial Officer (continued)

### Caterpillar has multiple initiatives across the company related to technology, especially big data and analytics. What role does our information technology team play on this front?

We want our customers to make more money with our products than they do with any of our competitors. Data is going to become a big piece of that value creation as we use the information from our products to create even more value for the customer. We have to be the best at that and we're well positioned. Our information technology group is an integral part of how we deliver the best value to the customers for our products.

### How do you see technology improving the way we work internally?

We are a large company, and we're very integrated. I think what we're lacking a bit as we move forward is how we can use technology today to pull all of us together around problems, around issues, around opportunities in a way that's much more efficient. We will see that change as we use true collaboration tools to solve business problems.

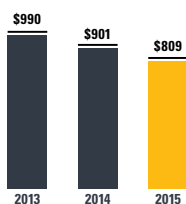
### How is the work of the Human Services Division supporting Caterpillar's growth?

Our human resource group is embedded in our business units. This means that all the issues around people and development are handled as close to the business as possible, such as how we can provide a better culture and environment so our people love to work here. People should feel their opinions and their ideas are listened to and acted on. There's a lot of value and personal satisfaction when you know if you bring something up, it'll be listened to, and it'll be a part of the solution.

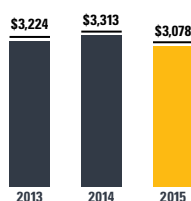
### What role is Cat Financial playing in supporting our customers?

We do a good (or excellent) job at making sure that our customers understand the value that Cat Financial has to offer. As a result, the percent of dealer deliveries that we've financed has gone up significantly in the past four years. That organization also runs extremely efficiently. They touch more customers in a day than you could ever imagine. If you walk through Cat Financial's customer service center, you can tell the only thing on our team's mind is "How do I help this customer?"

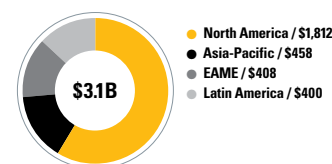
**FINANCIAL PRODUCTS  
SEGMENT PROFIT**  
(\$ IN MILLIONS)



**REVENUES**  
(\$ IN MILLIONS)



**REVENUES BY GEOGRAPHY**  
(\$ IN MILLIONS)



## BUSINESS REVIEW

## CATERPILLAR ENTERPRISE SYSTEM GROUP



A Conversation With

**DAVID P. BOZEMAN**

**Senior Vice President, Caterpillar Enterprise System Group**



Caterpillar Enterprise System Group (CESG) brings together critical processes and support groups with the goal to further improve our holistic manufacturing and value chain capabilities worldwide. The group is facilitating and supporting the strategy to achieve Enterprise Excellence by working deeply with the strategic businesses to align the enterprise, drive action and deliver superior results.

**What were the CESG's biggest wins for 2015?**

Implementing the three components of our overall integrated value chain strategy: 1) executing our lean methodology, which drives stability within Caterpillar and back through our suppliers; 2) deploying an engineered value chain approach that starts with the customer and really reimagines the way we design our overall supply chain; and 3) building our foundational capabilities.

**What are the most challenging aspects of the work done by CESG?**

We have a very large, diverse and complex company, and CESG is involved in strong change-management work. We're a 90-year-old company and we've done things for a long time, so trying to fundamentally change how we look at our overall supply chain calls for major change across the entire company, which can be a challenge. And it's tough work, but that's who we are as Caterpillar. We take on the tough challenges. We don't run away from them.

A Conversation With

**DAVID P. BOZEMAN** Senior Vice President, Caterpillar Enterprise System Group (continued)

### Why is it important to become more efficient as we manage through business cycles?

Companies that connect end-to-end and manage at the peak and at the bottom of cycles are the companies that win, and Caterpillar has a strategy to do that. CESG is taking out complexity and simplifying our products. This will help us be more flexible and agile in our overall processes, especially as markets shift. We call it our braking methodology: As the markets slow down, we can brake; as the market picks up, we can accelerate, not missing sales on the topside and being more efficient in pulling through profit as the overall market slows down.

### How are you helping the enterprise work smarter to drive efficiencies?

We are building a zero defect, zero rework mentality, building things right the first time and refusing to pass a defect on to the next phase of production. This allows us to track defects back to their source and eliminate them, never to return, letting us work faster, smarter and have better flow.

## BUSINESS REVIEW

## LAW AND PUBLIC POLICY



A Conversation With

**JAMES B. BUDA****Executive Vice President, Law & Public Policy and Chief Legal Officer**

Law and Public Policy is built to sustain Caterpillar's world-class reputation. The organization includes the Legal Services Division and the Global Government & Corporate Affairs Division. Responsibilities include legal and compliance services; media relations; internal communications; government affairs advocacy; sustainability consulting; and global environmental, health and safety services. Support for the Caterpillar Foundation is also provided by our group, making sustainable progress possible around the world. We are a global team, focused on serving our customers, communities and countries.

**What is Caterpillar doing well as it manages through very difficult market conditions?**

If one sees what this great Caterpillar team around the world has done over the last three or four years, it is remarkable. We have a magnificent safety record. Our product quality is solid. Our balance sheet is strong. Our iconic brand around the world continues to be impactful. I have lived through four economic downturns at Caterpillar. During this recent one, we have done more to position the company for the long term than ever before and that is why I am so excited about the future of this organization.

**How do we ensure that our values remain relevant around the world?**

Caterpillar has never been more global. We are doing business every single day in markets all around the world. In many of those markets, unethical business practices, like corruption and bribery, poor environmental practices or unsafe working conditions, are commonplace. But, in contrast to that, we are also seeing more and more customers who are demanding to know that Caterpillar will adhere to business practices that are grounded in ethics and compliance. We recognize that how we do business is paramount to protect our reputation, and every employee shares the responsibility to protect it. That is why Caterpillar's Code of Conduct is so important. The actions we take and the decisions we make tell the world who we are. The Code of Conduct serves as a daily reminder of the standards that are expected of everyone at Caterpillar.



A Conversation With

**JAMES B. BUDA** Executive Vice President & Chief Legal Officer, Law and Public Policy (continued)

### How is big data playing a role in areas such as law and public policy?

The Law and Public Policy organization is helping our internal clients be more efficient by streamlining our patent processes. Many of our R&D projects turn into patents – Caterpillar owns over 15,000 patents right now. Some patents are more valuable than others, while others give us a better return on investment than others. The Law and Public Policy Organization is using big data and analytics to develop a value for each of our patents.

### How do we use that valuation on patents?

We can use a particular valuation to decide whether it is important to renew a patent when it comes due and pay the fees attributable to it. Or, we can decide whether to file a patent in another country or enforce a patent against one of our competitors. It all depends on the patent's value, and big data allows us to gauge that, and allows our internal clients to make better and more efficient decisions.

## BUSINESS REVIEW

## FIVE-YEAR FINANCIAL SUMMARY

Dollars in millions except per share data

Years ended December 31,	2015	2014	2013	2012	2011
Sales and revenues	\$ 47,011	\$ 55,184	\$ 55,656	\$ 65,875	\$ 60,138
Percent inside the United States	41%	38%	33%	31%	30%
Percent outside the United States	59%	62%	67%	69%	70%
Sales	\$ 44,147	\$ 52,142	\$ 52,694	\$ 63,068	\$ 57,392
Revenues	\$ 2,864	\$ 3,042	\$ 2,962	\$ 2,807	\$ 2,746
Profit <sup>4</sup>	\$ 2,102	\$ 3,695	\$ 3,789	\$ 5,681	\$ 4,928
Profit per common share <sup>1</sup>	\$ 3.54	\$ 5.99	\$ 5.87	\$ 8.71	\$ 7.64
Profit per common share – diluted <sup>2</sup>	\$ 3.50	\$ 5.88	\$ 5.75	\$ 8.48	\$ 7.40
Dividends declared per share of common stock	\$ 3.01	\$ 2.70	\$ 2.32	\$ 2.02	\$ 1.82
Return on average common stockholders' equity <sup>3</sup>	13.3%	19.6%	19.7%	37.2%	41.4%
<b>Capital expenditures:</b>					
Property, plant and equipment	\$ 1,388	\$ 1,539	\$ 2,522	\$ 3,350	\$ 2,515
Equipment leased to others	\$ 1,873	\$ 1,840	\$ 1,924	\$ 1,726	\$ 1,409
Depreciation and amortization	\$ 3,046	\$ 3,163	\$ 3,087	\$ 2,813	\$ 2,527
Research and development expenses	\$ 2,165	\$ 2,135	\$ 2,046	\$ 2,466	\$ 2,297
As a percent of sales and revenues	4.6%	3.9%	3.7%	3.7%	3.8%
Average number of employees	110,800	115,600	122,500	127,800	113,600
December 31,					
Total assets	\$ 78,497	\$ 84,681	\$ 84,896	\$ 88,970	\$ 81,218
<b>Long-term debt due after one year:</b>					
Consolidated	\$ 25,247	\$ 27,784	\$ 26,719	\$ 27,752	\$ 24,944
Machinery, Energy & Transportation	\$ 9,004	\$ 9,493	\$ 7,999	\$ 8,666	\$ 8,415
Financial Products	\$ 16,243	\$ 18,291	\$ 18,720	\$ 19,086	\$ 16,529
<b>Total debt:</b>					
Consolidated	\$ 38,093	\$ 39,285	\$ 37,750	\$ 40,143	\$ 34,592
Machinery, Energy & Transportation	\$ 9,530	\$ 10,012	\$ 8,775	\$ 10,415	\$ 9,066
Financial Products	\$ 28,563	\$ 29,273	\$ 28,975	\$ 29,728	\$ 25,526

<sup>1</sup> Computed on weighted-average number of shares outstanding.

<sup>2</sup> Computed on weighted-average number of shares outstanding diluted by assumed exercise of stock-based compensation awards, using the treasury stock method.

<sup>3</sup> Represents profit divided by average stockholders' equity (beginning-of-year stockholders' equity plus end-of-year stockholders' equity divided by two).

<sup>4</sup> Profit attributable to common stockholders.

## BUSINESS REVIEW

## FORWARD-LOOKING STATEMENTS

Certain statements in this 2015 Year in Review relate to future events and expectations and are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “believe,” “estimate,” “will be,” “will,” “would,” “expect,” “anticipate,” “plan,” “project,” “intend,” “could,” “should” or other similar words or expressions often identify forward-looking statements. All statements other than statements of historical fact are forward-looking statements, including, without limitation, statements regarding our outlook, projections, forecasts or trend descriptions. These statements do not guarantee future performance, and we do not undertake to update our forward-looking statements. .

Caterpillar’s actual results may differ materially from those described or implied in our forward-looking statements based on a number of factors, including, but not limited to: (i) global and regional economic conditions and economic conditions in the industries we serve; (ii) government monetary or fiscal policies and infrastructure spending; (iii) commodity price changes, component price increases, fluctuations in demand for our products or significant shortages of component products; (iv) disruptions or volatility in global financial markets limiting our sources of liquidity or the liquidity of our customers, dealers and suppliers; (v) political and economic risks, commercial instability and events beyond our control in the countries in which we operate; (vi) failure to maintain our credit ratings and potential resulting increases to our cost of borrowing and adverse effects on our cost of funds, liquidity, competitive position and access to capital markets; (vii) our Financial Products segment’s risks associated with the financial services industry; (viii) changes in interest rates or market liquidity conditions; (ix) an increase in delinquencies, repossessions or net losses of Cat Financial’s customers; (x) new regulations or changes in financial services regulations; (xi) a failure to realize, or a delay in realizing, all of the anticipated benefits of our acquisitions, joint ventures or divestitures; (xii) international trade policies and their impact on demand for our products and our competitive position; (xiii) our ability to develop, produce and market quality products that meet our customers’ needs; (xiv) the impact of the highly competitive environment in which we operate on our sales and pricing; (xv) failure to realize all of the anticipated benefits from initiatives to increase our productivity, efficiency and cash flow and to reduce costs; (xvi) additional restructuring costs or a failure to realize anticipated savings or benefits from past or future cost reduction actions; (xvii) inventory management decisions and sourcing practices of our dealers and our OEM customers; (xviii) compliance with environmental laws and regulations; (xix) alleged or actual violations of trade or anti-corruption laws and regulations; (xx) additional tax expense or exposure; (xxi) currency fluctuations; (xxii) our or Cat Financial’s compliance with financial covenants; (xxiii) increased pension plan funding obligations; (xxiv) union disputes or other employee relations issues; (xxv) significant legal proceedings, claims, lawsuits or government investigations; (xxvi) changes in accounting standards; (xxvii) failure or breach of IT security; (xxviii) adverse effects of unexpected events including natural disasters; and (xxix) other factors described in more detail under “Item 1A. Risk Factors” in our Form 10-K filed with the SEC on February 16, 2016, for the year ended December 31, 2015.

## TRADEMARK INFORMATION

© CAT, CATERPILLAR, their respective logs, ACERT, BUILT FOR IT, Minestar, Product Link, Solar, Progress Rail, “Caterpillar Yellow”, the “Power Edge” trade dress, as well as any corporate and product identity used herein, are trademarks of Caterpillar and/or its subsidiaries and may not be used without permission.



© 2016 CATERPILLAR PUBLIC RELEASE  
All Rights Reserved. Printed in the U.S.A.

VisionLink is a trademark of Trimble Navigation Limited, registered in the United States and Other Countries